

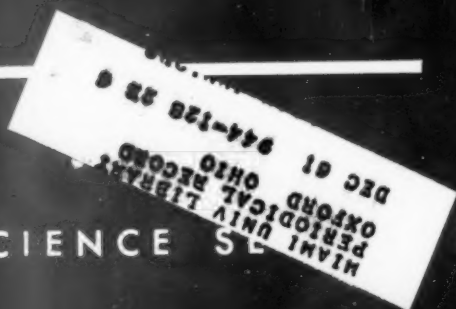
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50 A YEAR

June 24, 1961

SCIENCE NEWS LETTER

THE WEEKLY SUMMARY OF CURRENT SCIENCE



A SCIENCE

PUBLICATION

PUBLIC SAFETY

Russian Civil Defense

► IN SHARP CONTRAST to present United States policies, the Soviet Union operates "an elaborate civil defense system and a massive civilian program of compulsory training."

All Soviet civilians now have a continuing obligation to take Civil Defense instruction. Rough estimates of the Soviet Government's expenditures for an 18-hour training program, begun last year as the latest in a series, run from \$100,000,000 (figured in United States dollars), for 50,000,000 trainees, to \$200,000,000, for 100,000,000 trainees.

The amount believed spent by the Soviets for this fourth and latest Civil Defense course is between six and 12 times as much as the \$16,509,000 spent for training and information distribution by Federal, state and local governments in the United States during fiscal 1960.

For the same period, total enrollment in both basic and technical Civil Defense courses in this country is estimated at only 1,292,000 persons.

The Soviet set-up is outlined in a memorandum submitted by Frank B. Ellis, Office of Civil and Defense Mobilization director, at budget hearings before a House appropriations subcommittee in Washington, D. C.

The present required Soviet course deals with practical training in post-attack problems. Instruction and practical exercises are undertaken in such subjects as evacuation and shelter procedures, protection

against radioactive fallout, fire fighting and rescue operations, medical first aid and evacuation of casualties, and personal and area decontamination procedures. Work concludes with a three-hour examination, including practical demonstrations by each trainee.

Previous training cycles, beginning in 1955, featured a 10-hour theoretical course, a 22-hour lecture course with equipment demonstrations, and a 12-hour course (14 hours in rural areas), again including practical exercises and an examination.

A Soviet program of shelter construction also is under way. Information is scarce, but OCDM believes protective construction in apartment houses and other new buildings is "a standard practice in many centers of population and industry." Solid-wall basements with reinforced concrete ceilings, to protect against radiation, are thought to be "available to an important segment of the urban population" in many Soviet areas.

Mr. Ellis said the Soviets "appear to believe that in modern warfare the frontlines would be on the homefront."

Before 1954, the USSR distributed no information on nuclear weapons and their effects, confining defense courses to conventional weapons and World War II gases. But when this policy was changed, extensive training began on defense against fission weapons.

• Science News Letter, 79:386 June 24, 1961

METEOROLOGY

U-2's Are Weather Planes

► THE U-2 "spy" planes that caused an international furor are now winging over global land and oceans on peaceful missions for science.

The planes, which first became known to the general public last year when one was "shot" out of the Russian skies, have actually been collecting data for weather research since 1956. The planes have been flying straight into Pacific hurricanes, twisting tornadoes in the south central United States, and the atmosphere's jet stream high above the earth, in a relentless attack on the unknown whims of the weather.

These "flying weather stations" snap pictures of cloud cover and record wind velocities, temperatures and other measurements which are stored as decimals in an information "package." A ground computer later converts the data into specific weather readings for scientists to study.

The idea of U-2 weather planes in weather research originated in 1956 with the National Advisory Committee for Aeronautics, forerunner of the present National Aeronautics and Space Administration. In a joint program with the Air Weather Service of the U. S. Air Force, the planes were used for high-level atmospheric research.

Today, four U-2 squadrons tapped for service from the Strategic Air Command, are flying reconnaissance missions for the Air Weather Service from bases strung out from Alaska to Australia. Some are co-operating with the U. S. Weather Bureau in its fight against twisters cutting through "tornado alley," others are flying over Europe studying turbulent air. Next goal for the near future: the hotbed of storm activity in the Caribbean where many hurricanes are born.

Scientists paint a glowing picture about the usefulness and potential of U-2 weather research planes. Results from the Pacific typhoon studies are already being incorporated into future weather satellites research, Lt. Col. Robert C. Bundgaard, project officer of the Air Weather Service U-2 program, reported. The long-range, high-altitude weather project will also enable airlines to work out flights that would avoid rough or bumpy rides at certain altitudes above the continental United States.

Perhaps the biggest goal of all is that the role the U-2 is now playing in weather research will help control the violent tornadoes that killed 49 people in 1960.

• Science News Letter, 79:386 June 24, 1961

MINERALOGY

Black Diamonds Formed By Shock in Graphite

► DIAMONDS were artificially formed when an explosive shock ripped through a tiny pile of graphite.

Although not the type of diamond that would go in an engagement ring, the black diamonds were still the first ever produced by a shock wave. The diamonds sprang into existence when a one-pound explosive charge was set off, driving a split second shock wave into a graphite container with a force about 3,000,000 pounds per square inch.

Although the purpose of the experiment was "to study the effects of explosive shocks on various minerals," experimenters Dr. Paul S. DeCarli of the Stanford Research Institute, Menlo Park, Calif., and Dr. John C. Jamieson of the University of Chicago do not overlook the fact that this may be a new way of creating man-made industrial diamonds.

The experiments also unintentionally demonstrated that diamonds found in some meteorites could have formed under high pressure when a meteorite slams into the earth. Some scientists support this theory, introduced by Dr. Edward Anders of the University of Chicago, whereas others believe the diamonds formed deep within a body in outer space that later crashed into the earth.

"Although the experiment strongly supports Dr. Anders' theory, it does not discredit the other idea," Dr. Jamieson told SCIENCE SERVICE. "The experimental shock wave, of much shorter duration than when a meteor hits the earth, will have to be lengthened in some way before a definite conclusion can be reached."

Diamonds have been produced artificially in this country, Sweden, and Africa since 1955, but these processes all use a catalyst plus high laboratory temperatures and pressures instead of shock waves.

The experiment is reported in the journal *Science*, 133:1821, 1961.

• Science News Letter, 79:386 June 24, 1961

SPACE

Successful Flight With Rocket Belt

See Front Cover

► AN EXPERIMENTAL rocket belt has been tested successfully for individual manned flight without a vehicle.

More than 30 controlled flights have been made with the belt, built by Bell Aerosystems Company, Buffalo, N. Y., for the U. S. Army Transportation Research Command.

Test engineer Harold M. Graham has accomplished the "Buck Rogers come true" feat of flying up to 360 feet with the belt, which includes a rocket on the back at shown on the cover of this week's SCIENCE NEWS LETTER.

Average altitude on distance flights has been three to four feet, but hilltops up to 30 feet have been flown.

• Science News Letter, 79:386 June 24, 1961

IMMUNOLOGY

Protection From Measles

Children can now be protected against measles with gamma globulin and vaccine simultaneously. Ten years may pass before vaccine alone can do the job, Faye Marley reports.

► CHILDREN can be safely and effectively protected against measles, it has been found.

Children, 1,500 of them, have been happy human "guinea pigs" to test the immunization methods, which consist of into-the-muscles injection of gamma globulin simultaneously with vaccine made with a live but weakened measles virus.

The tests were made in Baltimore, Md., and St. Joseph, Mo.

Dr. Fred R. McCrumb Jr. of the division of infectious diseases, University of Maryland Department of Medicine, Baltimore, told SCIENCE SERVICE that the real contribution of his group of researchers was in proving that the combination did not lessen the immunization power of the vaccine.

Gamma globulin is a blood plasma component that has long been used to weaken or modify the effects of measles, sometimes responsible for serious complications such as deafness and encephalitis, or inflammation of the brain.

But it was not until January, 1960, that Dr. McCrumb and his co-workers decided to try simultaneous injections of gamma globulin and a new live attenuated measles-virus vaccine, developed by Samuel Musser, associate director of biological research for Research Laboratories of Philips Roxane, Inc., St. Joseph. They did their first work in St. Joseph with 12 children and gave the gamma globulin injections at first from three to five days following the vaccine.

Dr. McCrumb said that all measles vaccines had been based on the original work done by Nobel Prize winner Dr. John F. Enders of Harvard University. The Balti-

more scientists have also worked with a vaccine made by Parke, Davis and Company.

A report of the first 158 tests on susceptible school children in St. Joseph, done with the cooperation of the Board of Education and public and parochial schools, appears in the American Journal of Diseases of Children, June, 1961, published by the American Medical Association.

Of this group, 143 children, or 91% were immunized by this method without an appreciable number of significant reactions such as rashes and high fever.

"Until a further attenuated virus vaccine is perfected, which may take from five to ten years," Dr. McCrumb said, "the only practical method for large-scale immunization against measles is the combined procedure."

The Baltimore tests have been carried on with the cooperation of pediatricians working with hundreds of child patients susceptible to measles. Both the St. Joseph and Baltimore tests are continuing at present.

Working with Dr. McCrumb have been Drs. Richard B. Hornick, Sheldon Kress (now in the U. S. Army), Ann E. Schluederberg and Merrill J. Snyder, with a medical student, Thomas Bigbee, all of the division of infectious diseases.

Dr. McCrumb has reported his work to the National Institutes of Health, and hopes to have 6,000 tests ready to report at the international conference of measles immunization to be held at the National Institute of Health, Nov. 7-9, 1961.

• Science News Letter, 79:387 June 24, 1961

SPACE

Explorer VIII Results

► EXPLORER VIII provided 500 pieces of information for every second of its 54-day life and scored several firsts.

It took the first experimental measurements of the shape and dimensions of an ionized cloud around it. The cloud was formed mostly of positively charged atoms, or ions, in front of the satellite and negative ions behind it. The effects such clouds could have on radar tracking and the lifetime of satellite orbits are now being studied.

Explorer VIII went 1,450 miles into space to gather information about the ionosphere. It measured the temperature of electrons (charged particles) and found them generally like uncharged parts of the ionosphere.

The satellite also showed that oxygen is the predominant gas in the atmosphere up to 650 miles. At that point hydrogen takes over.

Several cosmic dust experiments were

made with Explorer VIII. Together with Vanguard III, the Explorer satellite has measured several thousand micrometeorite (tiny meteors) hits. It has also picked up a large number of micron-size dust particles similar to those recorded by Vanguard III.

The indication from the Vanguard satellite in November, 1959, was that this dust was associated with major meteor streams. It is believed possible that the Explorer, launched Nov. 3, 1960, sampled the same stream. Information on micrometeorite particles near earth will tell spacecraft designers how much protection is necessary for space vehicles.

Another important result of the Explorer VIII trip will make it possible for spacecraft to orient itself without optics. "Traps" for ions and electrons caught the charged particles, and a circuit provided a signal

from which the satellite orientation in space could be determined.

The Explorer VIII contained ten experiments in all, the National Aeronautics and Space Administration reported in Washington, D. C.

• Science News Letter, 79:387 June 24, 1961

ASTRONOMY

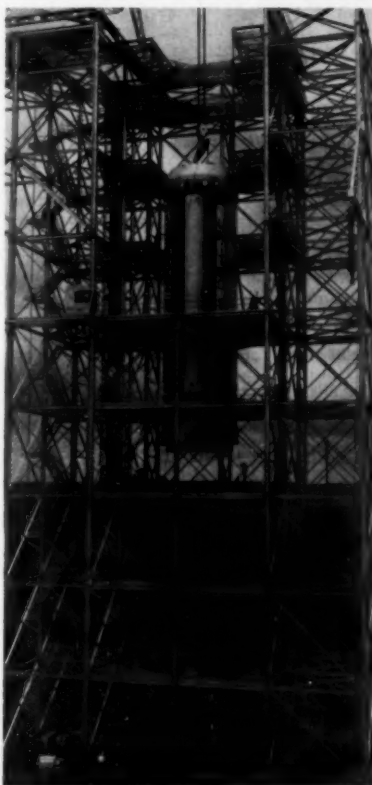
Fast Tracking Telescope Planned in Britain

► AN 80-FOOT radio telescope with a tracking speed faster than that of the world's largest, the 250-foot at Jodrell Bank, is being planned in England.

The radio telescope will be used to study radio noises from the sun and planets. It is expected to be finished by the end of 1963.

The high accuracy and fast tracking speed of the telescope are essential for following earth satellites and determining orbital data, British Information Services reported in New York.

• Science News Letter, 79:387 June 24, 1961



SATURN TEST STAND—A Saturn booster is lowered into its 204-foot test stand at George C. Marshall Space Flight Center, Huntsville, Ala. Mechanical features, temperature effects caused by liquid oxygen or nitrogen and effects of simulated flight vibrations can be tested in the 600-ton stand.

SCIENTIA INTERNATIONAL

NOVAS DEL MENSE IN INTERLINGUA

Apicultura.—Le "pheromones" es substantias chimic que omne ape recipe ab su regina in contacto directe e que determina su comportamento e su responsas physiologic in parallela con illos de omne le altere membros del mesme essame. Nunc Dr. N. E. Gary del Universitate Cornell a Ithaca, New York, ha demonstrate que etiam le facto mesme que le regina es acceptate per su "subjectos" como "regina e maestra" es determinate per un substantia chimic. Iste substantia es secretate per le glandulas mandibular del regina. Le ablation de ille glandulas resulta pro le regina in le perdita de omne su influenza super le resto del essame. Si longe que illa retene su glandulas mandibular illa remane omnipotente. De facto, il ha essite trovate que mesmo le morte non termina le poter del regina si su glandulas mandibular contine ancora ille mysteriose substantia royal.

Chirurgia.—Le reflexo del pupilla, que altera su dimensiones sub le effecto de lumine, remane intacte mesmo quando le altere reflexos del corpore es paralytate. In leve anesthesia, drogas paralytantes es frequentemente usate pro facilitar le travalo del chirurgo. Si un patiente, assi paralytate, se evalia durante le operation ab le somnio anesthetic, ille non pote mover se o alteramente manifestar su stato evaliate. Solamente le reflexo del pupilla pote revelar lo. Iste facto, non prevemente cognoscite, esseva discoperite e reportate per Dr. Phyllis G. Croft de London, Anglaterra.

Criminologia.—Esseva patentate un nove methodo dactyloscopic in que le impressiones digital se face in un pellicula de plastic que es applicate al digitos in forma liquide. Le systema esseva elaborate pro facilitar le identification del victimas de un atomic macrodestruction de vita human. Sed intertanto illo es in uso in Canada e le Statos Unite in le detection de criminales.

Economia de Aqua.—Secundo un reporto del Officio pro Aqua Marin (intra le statounitense Departamento del Interior), il es technicamente possibile installar "fabricas de conversion de aqua marin in aqua potabile" capace de rendimento in massa a un costo de infra 50¢ per mille gallones. In le municipalitate typic del Statos Unite, le costo del provision de (non-converte) aqua fresc amonta currentemente a inter 30 e 40¢ per mille gallones. Assi le conversion de aqua marin es ancora economicamente impractic. Le reporto del Officio pro Aqua Marin explica additionalmente que le progressos technic necessari pro facer de aqua convertite un producto economicamente rational (e non solo experimentalmente possibile) va depender de major e costose e forsan radicalmente re-orientate recercas physic e chimic.

Electrotechnica.—Electroluminescente plattas metallic es in production per Westinghouse. Le plattas contine un pellicula electroconductive e es coperte de un phosphoro special que brilla quando electricitate es applicate a illo. Iste typo de "corpore luminescente" functiona sin filamentos, tubos, o vapores e produce practicamente nulle calor. Usque nunc plattas esseva facite solamente ex vitro o plastic.

Foresteria.—Dr. P. S. Zakharov del Ministerio Sovietic de Production Forestal ha disveloppate un simple methodo pro desiccar e conditioner ligno ante le abattition del arbore. Primo le arbore es "anulate" (i.e., un banda de cortice circum su trunco es excidite), e in le area assi lesionate un numero de tubos de vitro es inserite. Iste tubos "alimenta" le arbore (ante su morte) con specific e predeterminate solutiones de substantias chimic que impartit al ligno del arbore certe specific qualitates. Fluoruro de natrium accelera le desiccation del ligno. Antipyrina

rende lo incombustibile. Sales de silicio augmenta su duressa. Acido acetic adde un color orange a betulas e fagos. Dicyanodiamida rende le ligno de betulas extrememente flexible.

Musica.—Le Compania Baldwin es possessor del patente pro un piano in que le vibrations del chordas per se es quasi inaudibile sed que es equipate con un systema electric que pote (1) amplificar le musica e diffunder lo in un sala de concerto de non importa qual dimensiones o (2) transmittre le musica a un casco auricular portate per le musico mesme, de maniera que nulle altere persona suffre con le musico quando ille practica su exercitios.

Psychiatria.—Electrochoc, como illo es usate in le psychiatria, non es nocive sed plus tosto benefic pro le functionamento del corde. Al Hospital Forest a Des Plaines in Illinois, un gruppo de 628 patientes psychiatric tractate con electrochoc includeva 131 con anomalitates electrocardiographic constatate ante le tractamento. In 30 de illes, le electrocardiogramma prendite post le tractamento revelava meliorationes causate per illo. Nulle caso de pejoration esseva incontrate. Le conclusion que electrochoc beneficia le corde non es valide in casos de thrombose coronari o de anormal contractions cardiac. Nulle tal esseva includite in le supra-mentionate serie.

Psychiatria.—Inter 53 pueros delinquent in un schola de reforma, 26 esseva tractate con pillulas: 30 con pillulas contine un droga tranquillizante, 13 con pillulas de un placebo (sucro). Le altere 27 remaneva sin tractamento. Le 26 con tractamento disveloppava un melioration de comportamento; le 27 alteres non. Quando le medication esseva discontinuate, le 13 tractate con le droga redevenia "casos problematic"; le 13 tractate con sucro remaneva meliorate.—Reportate per recercatores del Universitate Johns Hopkins.

Recercas de Cancere.—Canceres hepatic ha essite trovate con un incidentia de 100 pro cento in le population de trucas in un gruppo de piscarios al west del Statos Unite. In omne le casos le trucas esseva del racia cognoscite como truca-iride. In omne le casos le dieta del trucas includeva un bolletta sic continevitaminas, antioxydantes, substantias de crescentia, e altere substantias synthetic. Piscarios con trucas racialmente affin sed non recipiente le mentionate bollettas in lor dieta non monstrava ulle cancer hepatic. Il es possibile que le morbo es causate per un imbalancia dietari resultante del alimentation artificial, sed il es multo plus probable que un agente specific (contine in le bollettas) es le factor causal responsabile pro iste remarquabile phenomeno. Le metabolismo de pisces es certo non identic con illo de humanos, sed omne progresso in nostre comprehension del mechanismo etiologic de un cancer (de non importa qual typo) es multo benvenite. Ben que le hic reportate occurrentia va probabilemente haber nulle signification directe pro le canceroterapia in humanos, illo offere in omne caso un remarquabile opportunitate pro le studio experimental del causation de al minus un typo de cancer inter le multes que afflige le vita organie.

Recercas de Tuberculose.—In le curso del passate cinque annos, le incidentia de tuberculose in New York ha montate in consequentia de un crescente frequentia de germes resistente contra isoniazida. Isto es un del tres principal drogas usate in le moderne therapia de tuberculose. Le altere duo, streptomycina e acido para-amino-salicylic, es non ancora restringite in lor utilitate in New York per le occurrentia de germes resistente.

• Science News Letter, 79:388 June 24, 1961

GENERAL SCIENCE

Reading Interlingua

► YOU CAN READ Interlingua if you had no more than one semester of high school French or Spanish or Latin and flunked it. You can read and understand a great deal of it even if you have never had contact with any foreign language.

Twenty-three medical journals regularly publish in Interlingua abstracts of their original papers.

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INVENTION

Patents of the Week

A fingerprinting method that stores prints on a plastic film has been patented. A secret radio communication system and a bleacher seat are other recent inventions.

► A FINGERPRINTING method designed for tracking down criminals or identifying victims of a nuclear attack has been patented.

Dr. William D. Stewart and Joseph A. Terek, research scientists at Atlantic Research Corporation, Alexandria, Va., received patent No. 2,986,831 for a fingerprinting process that forms a plastic "cast" of an imprint.

Designed originally for identifying mass casualties in time of an atomic war, the method is now extensively used for solving crimes by the Canadian Mounted Police and various police departments throughout the United States. The Federal Bureau of Investigation (FBI) is also reportedly interested.

A fine powder is first sprinkled on a fingerprint, followed by a spray of liquid plastic (polymer). The plastic film hardens in a few minutes, trapping a powdered imprint, and is then peeled off. The film does not smudge the fingerprint and can be stored as a permanent record, the patent claims. Dr. Stewart has already received more than 40 patents for various synthetic rubber compounds and plastics.

An ultra-secret radio communication system that discourages the enemy from intercepting radio messages during wartime was patented by Claudius H. M. Roberts, Washington, D. C., and Wilbur S. Hinman Jr., Falls Church, Va., who assigned rights of patent No. 2,987,614 to the U. S. Army. Speech is compressed and coded on tape into a series of pulses, lasting only a few thousandths of a second, and beamed over transmitters.

Spectators sitting in bleachers while watching basketball or other sports can sit more comfortably with a back rest invented by Robert S. Walworth, Berlin, Wis., who assigned rights of patent No.

2,987,111 to Consolidated Foundries and Mfg. Corp., Chicago, Ill. The back rest collapses easily when telescopic bleachers are pushed back into the wall for storage.

An "automatically controlled electric kettle" for boiling water won patent No. 2,987,607 for William P. Paulin of Barrie, Ontario, Canada, who assigned rights to Canadian General Electric Company, Limited, Toronto, Canada. The improved electric kettle has a pilot light that lights up when the boiling point is reached. A switch can adjust the timing of the thermostat to correspond to the boiling point of a particular region whether it is in the mountains or at sea level.

• Science News Letter, 79:389 June 24, 1961

PSYCHIATRY

How to Be a Nobelist

► WHAT IS REQUIRED to win a Nobel Prize was learned from three scientists of world-wide renown, who attended the third World Congress of Psychiatry, Montreal, Canada, to report on creativity in science.

The three Nobelists are Lord Adrian of Cambridge, England, Dr. Linus Pauling of California, and Dr. Albert Szent-Gyorgyi of Hungarian-born biochemist.

Being born in the right kind of family was emphasized by Dr. Szent-Gyorgyi, Hungarian-born biochemist.

"I am the fourth generation in a family of scientists, and I have grown up in a very intellectual atmosphere where only scientific or artistic achievement counts. As children, we knew nothing about money or politics, but knew something of what was going on in art and science all over the world."

BIOLOGY

Drying of Cells Allows Indefinite Storage Time

► A SIMPLE rapid method of drying cells for microscopic study was reported at the Syvertsen Memorial Symposium and 12th annual meeting of the Tissue Culture Association in Detroit, Mich. The new method permits indefinite storage of dried cells and eliminates chemical treatment that may disturb vital details of cell structure and function.

It was developed by scientists at the National Cancer Institute of the National Institutes of Health, Bethesda, Md. Henry C. Orr, Dr. Morris Belkin and Walter G. Hardy, all of NCI, and Dr. Ezio Merler, a former NCI scientist, now of the Harvard Medical School, Boston, reported the method.

Phosphorus pentoxide, put into jars with the cells to be treated, rapidly removes water from, and dries, the cells. Other methods require freezing and drying, or require application of chemical hardening agents.

• Science News Letter, 79:389 June 24, 1961

Dr. Szent-Gyorgyi also stressed the importance of a burning enthusiasm for work in the field of science.

"I find myself running every morning, at an early hour, very impatiently, to my laboratory," he said. "My work does not finish when I return from my workbench in the afternoon. I go on thinking about my problems all the time."

"Conscious thinking only acted as a primer for my brain, which seemed to have worked much better without my muddling, when I was asleep."

The importance of the unconscious in the birth of new ideas was also stressed by Dr. Pauling, Nobel Prize-winning chemist from the United States.

"From my own experience, I have come to the conclusion that one way for me to have a new idea is to set my unconscious to work on a problem."

"I doubt that the unconscious can be directed to work on a problem. But the problem can be suggested to it, and if it is interested in it, something may result."

Dr. Pauling told the Congress how he had trained his unconscious to help in the discovery of new ideas.

"I had developed," he said, "a habit of thinking about certain scientific problems as I lay in bed waiting to go to sleep. Sometimes I would think about the same problem for several nights in succession while I was reading or making calculations about the problem during the day. Then I would stop working on the problem and stop thinking about it in the period before going to sleep. Some weeks or months might go by, and then, suddenly an idea that represented a solution to the problem or the germ of a solution



INKED FINGERPRINT



PLASTIC FILM PRINT

to the problem would burst into my consciousness."

The part played by new instruments or new materials—the plastics, computing machines, infrared spectrometers and electron microscopes—in facilitating a whole series of developments in science was stressed by Lord Adrian, English neurologist.

PSYCHIATRY

Alcoholism in Germany

► ALCOHOLISM has become a serious problem in Germany. Dr. B. Lewin, psychiatrist of Dusseldorf, Germany, reported to the Third World Congress of Psychiatry in Montreal, Canada.

After the close of the war, and as the prosperity of Germany increased, the number of excessive drinkers also increased although addiction to drugs decreased, Dr. Lewin said. The World Health Organization estimated approximately 7,000,000 excessive drinkers of whom 300,000 must be called addicts.

The usual "abstinence cures" proved to be failures in most cases, the patients relapsing to their old vice as soon as released from the hospital.

Working from the assumption that the compulsive drinking was due to psychological causes, whether conscious or unconscious, psychotherapy was started. At first individual therapy was used, but as the number of cases mushroomed, group therapy was resorted to, Dr. Lewin reported.

The patients were enthusiastic about the new treatment. As it continued, the patients developed not only a mutual understanding of their problems, but a social conscience which was of great importance later in life with their families and in the community.

• Science News Letter, 79:390 June 24, 1961

Murderers' Brain Waves

► ADOLESCENT murderers have been found to have peculiar brain-wave patterns characterized by six- and 14-per-second spikes in the brain-wave tracing. This was reported to the Third World Congress of Psychiatry in Montreal, Canada, by Drs. Sherwyn M. Woods and Howard C. Stehle of Madison, Wis. Two young murderers they studied also displayed a peculiar lack of emotion, a compulsive and impulsive drive to commit the aggressive act and a lack of conscience in reference to it.

The juvenile murderers are not subject to convulsions or unconsciousness, and their symptoms do not resemble either grand mal or psychomotor epilepsy.

The peculiar "six and 14 syndrome" has also been found in a significant number of children and adolescents who have committed serious crimes such as fire-setting, aggressive sexual behavior, acts of violence and destruction, and murder.

• Science News Letter, 79:390 June 24, 1961

Attitude and Drug Value

► AN ANTI-DRUG attitude on the part of parents, or of the child himself, may hide

It was with "profound sorrow" that psychiatrists attending the Congress learned of the death of their famous colleague, Carl Gustav Jung of Switzerland. All the delegates to the Congress, as one man, rose to their feet for a moment of silent tribute to the great man.

• Science News Letter, 79:389 June 24, 1961

the beneficial effect of a drug on child behavior, Dr. Mauricio Knobel of Buenos Aires, Argentina, warned his colleagues at the Third World Congress of Psychiatry meeting in Montreal, Canada.

The drug Ritalin is effective for treating overactivity in children, Dr. Knobel found from tests of it on 150 young overactive patients aged from seven to 15 years. The Ritalin, made by CIBA Pharmaceutical Products, Inc., was given twice a day for a period of eight months.

Although teachers' reports and the personal observation by Dr. Knobel showed that overactivity and aggressiveness diminished in all the children, reports of the parents in some cases would indicate that their children did not improve. Dr. Knobel traced these unfavorable reports to a prejudiced attitude on the part of the parents and in some cases to the child himself.

This attitude Dr. Knobel calls the "anti-drug effect." It is like, he said, a reverse of the "placebo effect." The placebo effect is the name given by medical researchers to the fact that sometimes patients will get better no matter what is done for them even if they are given only a "sugar pill" or capsule containing an inert powder without any medicinal properties. Such a "fake" pill without medicinal value is called by scientists a "placebo."

Whenever the physician notices such an anti-drug attitude, he should use psychotherapy first and the drug only afterwards, Dr. Knobel advised.

Despite the effectiveness of Ritalin for the overactive child, psycho-social therapy combined with the drug multiplies and definitely increases its effectiveness and improves results, Dr. Knobel said.

• Science News Letter, 79:390 June 24, 1961

Eye Shows Inner Tension

► THE WAY the pupil of the eye responds to light provides a simple, observable test for internal tension, restlessness and anxiety, Drs. Kosta Kurtesh and Josif Divich, psychiatrists of Belgrade, Yugoslavia, reported to the Third World Congress of Psychiatry in Montreal, Canada.

The reaction of the eye's pupil to light was observed in 3,210 cases of psychoneurotic outpatients and in 43 hospital schizophrenic patients.

The pupil reacted little, if at all, among the 3,210 psychoneurotics and among 29 of the 43 psychotic cases. There was no syphilis in either group, the physicians explained. (Syphilis is also characterized by an absence of pupillary reaction to light.)

With all psychoneurotics showing little or no reaction to light, preoccupation with their own personality was predominant, the psychiatrists reported. The condition was found to be temporary and disappeared when the internal tension was relieved.

• Science News Letter, 79:390 June 24, 1961

ASTRONOMY

Supernova Spotted In Distant Galaxy

► A SUPERNOVA or exploding star has been discovered in a distant star system.

The star system known as M-61 is a bright huge spiral like the Milky Way galaxy to which the sun belongs.

The star itself, which by exploding has become many million times its original brightness, is only of 13th magnitude when seen from earth and can only be observed with a telescope.

The galaxy to which the star belongs is located in the constellation Virgo, the virgin, seen due south in the sky soon after dark.

The supernova was discovered by Dr. M. L. Humason, astronomer at Mt. Wilson and Mt. Palomar Observatories, on June 3, Harvard College Observatory reported.

• Science News Letter, 79:390 June 24, 1961

GENERAL SCIENCE

10% of State Personnel Scientific or Technical

► ALMOST 88,000 scientists, engineers and technicians in all 50 states are on state government payrolls, a survey completed in 1960 shows. They comprise about 10% of the working force in the 3,000 state agencies covered.

The survey, first of its kind, was undertaken by the Bureau of Labor Statistics at the request of National Science Foundation.

The 12,500 state-employed scientists included 3,700 biologists, 3,500 agricultural specialists, 1,650 medical scientists, 1,300 psychologists, 1,200 chemists, and 600 geologists and geophysicists. Engineers totaled more than 28,000, with 45% licensed or registered as professionals. More than half of the 46,798 technicians were engineering or physical science aides. The remainder worked as surveyors, draftsmen and technicians in the life sciences.

A heavy majority of the scientists, engineers and technicians were employed in three broad categories—public works and highways, health and welfare, and agriculture and conservation.

Employment of scientists and engineers ranged from 71 in Alaska to 5,310 in California. California, New York, Massachusetts, Illinois and Texas each employed more than 1,500.

The National Science Foundation report, "Employment of Scientific and Technical Personnel in State Government Agencies," is available for 45 cents from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

• Science News Letter, 79:390 June 24, 1961

Books of the Week

For the editorial information of our readers, books received for review are listed. For convenient purchase of any U. S. book in print, send a remittance to cover retail price (postage will be paid) to Book Department, Science Service, 1719 N Street, N.W., Washington 6, D. C.

ADVANCES IN BLOOD GROUPING—Alexander S. Wiener—Grune, 549 p., \$11. Collection of articles covering research since 1954, arranged by topic in logical order, with comments to bring the subject up-to-date.

AMERICAN INDUSTRIAL RESEARCH LABORATORIES—Frederick A. White—Public Affairs Press, 227 p., \$6. Annotated review of the contributions made to modern science by the industrial laboratories, with particular attention to the field of analytical instruments.

ATOMS AND ENERGY—F. R. Elwell—Criterion Bks., 144 p., illus., \$3.50. Introduction to the principles of the atom and its contributions, for young people.

THE BIOCHEMISTRY OF INSECTS—Darcy Gilmore—Academic, 343 p., \$8. Text and working manual for investigators in insect metabolism and biochemistry.

BIOGRAPHY OF PHYSICS—George Gamow—Harper, 338 p., illus., \$5.95. Each chapter centers around a single great scientist whose contributions serve as background to explaining the development in the basic laws of physics.

BIOLOGICAL APPROACHES TO CANCER CHEMOTHERAPY—R. J. Harris, Ed.—Academic, 431 p., illus., \$14. Papers of symposium held at Louvain, June 1960, under the auspices of UNESCO and the World Health Organization.

BIOLOGICAL EDUCATION IN AMERICAN SECONDARY SCHOOLS, 1890-1960—Paul DeHart Hurd—AIBS, 263 p., illus., \$4.75. Reports on 70 years of curriculum development and investigations of classroom and laboratory learning in American high schools.

BIOLOGICAL EFFECTS OF MICROWAVE RADIATION, Vol. 1: Proceedings—George M. Knauf, Chmn., John Fouse Peyton, Ed.—Plenum Press, 333 p., illus., \$10. Papers on the measurement and protection against environmental hazards to animals and personnel from radar and other radio frequency installations.

BIOLOGY THROUGH MICROBES: A Laboratory Guide—Alfred S. Sussman—Univ. of Mich. Press, 202 p., illus., paper, \$3.95. Laboratory manual stressing precision and imagination.

BLOOD PLATELETS—Shirley A. Johnson and others, Eds.—Little, 732 p., illus., \$18.50. Papers and discussions covering research on the morphology, physiology, biochemistry and pathology of blood platelets, presented by 56 leading investigators at the Henry Ford Hospital International Symposium, held in Detroit in 1960.

THE BOOK OF BIRD LIFE: A Study of Birds in Their Native Haunts—Arthur A. Allen—Van Nostrand, 2nd ed., photographs by author, illus. by W. C. Dilger, \$9.75. Readable introduction to ornithology, outlining the principles that govern the actions of birds and suggesting methods of study.

CAREERS AND OPPORTUNITIES IN PHYSICS—Philip Pollack, introd. by Marsh W. White—Dutton, rev. ed., 159 p., photographs, \$3.75. Up-to-date information for young people about the nature of, qualifications for, and opportunities of careers in physics.

DOCTORS, PATIENTS AND HEALTH INSURANCE: The Organization and Financing of Medical Care—Herman Miles Somers and Anne Ramsay Somers—Brookings, 576 p., \$7.50. Comprehensive study of how private medical care is organized and financed in the United States, summing up technological change and critical areas for policy decisions.

EFFECTIVE COLLEGE RECRUITING—George S.

Odiorne and Arthur S. Hann—Bur. of Industrial Relations, Univ. of Mich., 288 p., \$5. Analyzes the annual "million-dollar manhunt" on college campuses, and makes practical suggestions to company recruiters and students.

ELECTRONICS PACKAGING WITH RESINS: A Practical Guide for Materials and Manufacturing Technicians—Charles A. Harper—McGraw, 339 p., illus., \$11. Introduction to the developments in materials, methods and techniques employed in packaging electronic components.

EVERYMAN'S CLASSICAL ATLAS—J. Oliver Thomson—Dutton, rev. ed., 195 p., maps, photographs, \$5. Includes 70-page essay on the development of ancient geographical knowledge and theory.

FRENCH: French-English, English-French (American English)—Richard Switzer and Herbert S. Gochberg—Follett, 512 p., \$2.50; indexed, \$2.95. Practical modern dictionary with short traveler's conversation guide.

GERMAN: German-English, English-German (American English)—Paul H. Glucksman; Herbert Rodeck, Ed.—Follett, 543 p., \$2.50; indexed, \$2.95. Modern dictionary with traveler's conversation guide.

INTRODUCTION TO HI-FI—Clement Brown—Gernsback, 188 p., illus., \$5; paper, \$3.20. Information on how to achieve high quality sound reproduction in the home.

INTRODUCTORY SYSTEM ANALYSIS: Signals and Systems in Electrical Engineering—William A. Lynch and John G. Truxal—McGraw, 450 p., illus., \$7.50. Textbook presenting fundamental concepts of linear systems analysis.

LIFE'S LONG JOURNEY—Kenneth Walker—Nelson, 191 p., \$3.50. British surgeon's thoughts on evolution and man.

LINE, WAVES AND ANTENNAS: The Transmission of Electric Energy—Robert Grover Brown, Robert A. Sharpe and William Lewis Hughes—Ronald, 297 p., illus., \$10. Introductory text in the area of electric energy propagation.

SOVIET PSYCHOLOGY: A Symposium—Transl. from Russian with foreword by Ralph B. Winn—Philosophical Lib., 109 p., \$3.75. Psychologists of contemporary Russia express the principles underlying educational programs in Soviet Russia.

STUDIES IN ITEM ANALYSIS AND PREDICTION—Herbert Solomon, Ed.—Stanford Univ. Press, 310 p., \$8.75. On the application of mathematics to problems in psychology, such as item analysis, test design and classification.

THESE RUINS ARE INHABITED—Muriel Beadle—Doubleday, 359 p., \$4.95. Lively story of a year spent at Oxford University, by the wife of the Nobel Prize-winning geneticist.

TOPOLOGY—John G. Hocking and Gail S. Young—Addison-Wesley, 374 p., illus., \$8.75. Graduate course, presenting both point-set and algebraic methods in a unified treatment of basic topology.

WEATHER, WATER AND BOATING—Donald A. Whelpley—Cornell Maritime, 151 p., illus., by Carl W. Henry, Jr., photographs, \$4. Practical up-to-date weather information for sailors by a meteorologist who likes boating.

THE WORLD OF GEOLOGY—Introd. by L. Don Leet and Florence J. Leet, Eds.—McGraw, 262 p., illus., \$4.25. The story of geology, from the origin of the earth to erosion, a short survey for the layman.

• Science News Letter, 79:391 June 24, 1961

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ASTRONOMY

Jupiter and Saturn Now in View

The planet Jupiter can be seen in the southeast during July and is brighter than any star in the sky. Saturn rises earlier but is fainter, James Stokley reports.

► **BRILLIANT JUPITER** has now come into view. Fainter, but still prominent, Saturn has also appeared.

Both of these planets are in the southeastern sky, as shown on the accompanying maps. These show the heavens as they look about 10:00 p.m., your own kind of standard time (add one hour for daylight saving time) at the first of July. They have the same appearance an hour earlier at the middle of July, and two hours earlier at the end.

Jupiter is in the southeast, in Capricornus, the horned goat. Brighter than any other planet, or any star, it is easy to identify. It rises in the east about the time the sun is setting in the west. By the time the sky is dark it is well in view.

Saturn is a little farther west, in Sagittarius, the archer, and rises somewhat earlier than Jupiter. Although Saturn is equal in brilliance to a bright first magnitude star, it is only about one-eleventh as bright as its neighbor.

Summer Constellations Appear

Extending across the southern sky, some of the characteristic and prominent constellations of the summer evening can be seen.

The most conspicuous of these is Scorpius, the scorpion, which is one constellation that has some resemblance to the thing after which it is named. A scorpion's tail does curl around in the same manner as the stars in the part of the figure toward the horizon. Farther up in Scorpius is the star called Antares. This name means "rival of Mars," and was given because both star and planet have a similar red color.

To the left of Scorpius is Sagittarius, the archer, in which Saturn now stands. It is hard to see an archer among these stars, but you can easily make them into a teapot. The spout is next to the scorpion's tail, and the handle to the left (just over the R in the name of the group on the star map). It can also be seen as the figure of the "milk dipper." The handle of the teapot is the bowl of the dipper, while the handle of that implement extends upward into the teapot's lid.

Libra, the scales, is on the right-hand side of Scorpius. Still farther to the right is Virgo, the virgin, with the first magnitude star called Spica. Continuing to the right of this group, you come to Leo, the lion, which is shown on the map of the northern skies. And in Leo you will find the third planet of our July evenings—Mars. However, it is so far away (nearly 200,000,000 miles, more than twice as far as the sun) that it has become quite faint. Its low altitude makes it appear even fainter.

In addition to Antares and Spica, there

are several other first magnitude stars visible these July evenings. Directly above Virgo is Bootes with brilliant Arcturus. And high in the east, shown half on the northern sky map and half on the southern, is Lyra, the lyre, with Vega. Below (shown on the northern map) is Cygnus, the swan, with Deneb. And to the right (on the southern map) is Altair, in Aquila, the eagle.

There are two planets not already mentioned, which are sometimes visible to the naked eye; both of them come into view during July in the early morning hours. First of these is Venus. It appears above the northeastern horizon about two hours before sunrise, in Taurus, the bull. In brightness, it just about matches Jupiter. Second is Mercury, innermost of all the planets. On June 19 it is farthest east of the sun. For a few days around this time it also will be visible low in the northeast before sunrise, but not until the sky is already brightened with the dawn.

Now that Jupiter and Saturn have returned to the evening sky after an absence of many months, it might be of interest to see why these planets do not become visible at the same time every year.

Jupiter has a year of 11.86 of our years: that is, it takes that long for Jupiter to go once around the sun. When the earth, with its faster movement, overtakes Jupiter we say

that planet is in "opposition," in other words, it is directly opposite to the sun. This will happen July 25 and then Jupiter will be at its closest for the year, at a distance of about 380,000,000 miles.

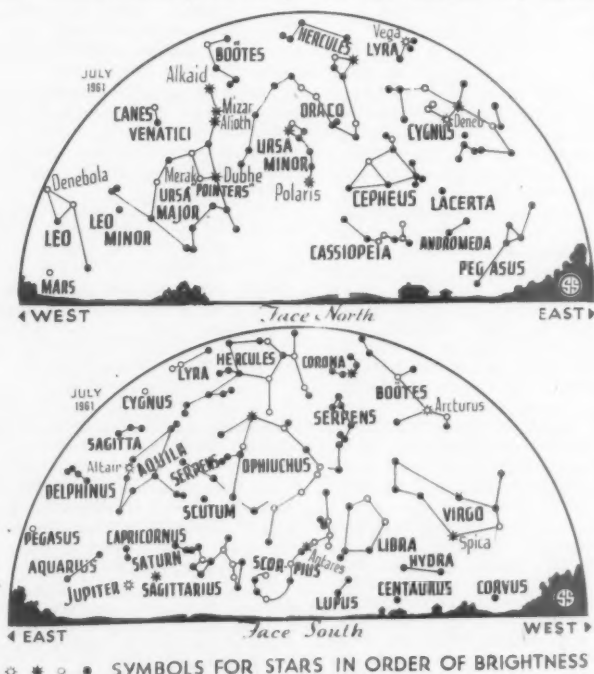
On July 25, 1962, earth will have made a complete circuit of its orbit, but Jupiter will then have moved about a twelfth of the way around its circular path. Not until Aug. 31 will we catch up to Jupiter next year, and so then that planet will be farther east among the background stars. The movement of Jupiter, like that of earth and other planets, is easterly.

But if you watch Jupiter from night to night, you will find that now it is moving toward the west—from the constellation of Capricornus into Sagittarius. Its motion is now "retrograde:" its usual movement to the east is "direct."

Ancient Astronomy

In ancient times, when even astronomers thought that the sun, the moon and the planets all revolved around the earth, they had to devise a complicated mechanism to explain why Jupiter and other planets do not progress steadily eastward. The orbit of Jupiter, they said, was primarily a circle, which they called the deferent. But this was not the path along which the planet moved. Instead it moved in a small circle (called an epicycle), the center of which moved uniformly around the deferent.

When this failed to explain all the observed motions they added additional



★ ★ ○ ★ SYMBOLS FOR STARS IN ORDER OF BRIGHTNESS

epicycles on top of the first ones. Finally, as a famous English astronomer, Sir Arthur Eddington, once observed: "The music of the spheres was lost in the whirl of machinery."

After acceptance of the modern idea that the planets, including earth, revolve around the sun, in elliptical rather than circular orbits, the idea of epicycles and deferents was abandoned. Jupiter now seems to be going backward simply because we are going past at a higher speed. Perhaps you have seen the same effect when you have been riding on a train and it has overtaken a slower freight train on the next track. Even though it is going the same direction as the passenger train, it may look, to the passengers, to be going backwards.

Saturn Moves Slower Than Jupiter

A similar effect, of course, occurs with Saturn, which moves more slowly than Jupiter, taking nearly 30 years for one circuit of its orbit. Saturn will be at opposition on July 19, its distance about 836,000,000 miles. The 1962 opposition will occur on July 31.

So, with Jupiter and Saturn in opposition in July, both planets rise at sunset and are visible all through the night. For the rest of 1961 they will continue to be prominent. But, as the sun's apparent movement through the sky toward the east brings that orb nearer and nearer to them, the planets will set earlier and earlier. Next Jan. 22, for Saturn, and Feb. 8, for Jupiter, they will be in the same direction as the sun and not visible. A few months later they will shine in the eastern sky before sunrise and, by late summer of 1962, they will again be in the evening sky, as they are now.

Celestial Time Table for July

4	10:33 p.m.	Moon in last quarter
5		Earth farthest from sun, distance 94,451,000 miles
12	2:12 p.m.	New moon
15	6:00 a.m.	Moon farthest, distance 252,300 miles
16	9:00 p.m.	Moon passes Mars
19	4:00 a.m.	Mercury farthest west of sun, visible for a few days about now low in east before sunrise.
	6:00 a.m.	Saturn opposite sun and nearest earth, distance 836,100,000 miles
20	6:14 p.m.	Moon in first quarter
25	6:00 a.m.	Jupiter opposite sun and nearest earth, distance 380,400,000 miles
27	2:00 a.m.	Moon passes Saturn
	noon	Moon passes Jupiter
	2:51 p.m.	Full moon
28	4:00 a.m.	Moon nearest earth, distance 222,200 miles

Subtract one hour for CST, two hours for MST, and three hours for PST.

Know the Sky

These star maps showing the positions of stars and planets can help you locate satellites when they flash briefly across the sky. Familiarity with the constellations and their relative positions makes locating artificial moons much easier whenever they are visible from your area.

• Science News Letter, 79:392 June 24, 1961

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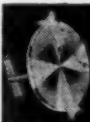


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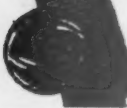
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GENERAL SCIENCE

News From Science Clubs

► **VARIED, IMAGINATIVE PROGRAMS** for school and community betterment indicate that science club members are actively concerned about their responsibilities as good citizens. Here are some of the improvement projects reported to Science Clubs of America:

MEMBERS of the North College Hill Chapter of SCA, North College Hill High School, Cincinnati, Ohio, volunteered to serve as precinct workers at polling places during a successful bond election. Money from the bond issue is allocated for the building of four new school science laboratories.

ELLERBE Science Club at the Ellerbe, N. C., High School is undertaking a landscaping program for the school grounds. Work began with the planting of a flower bed at one of the school entrances.

MAIN REASON for forming the Physics Club at Notre Dame Academy, Roxbury, Mass., was to supplement school science courses by "offering capable Juniors and Seniors an opportunity to participate in Physics Seminars," the club secretary reports.

IN ROCHESTER, N. Y., the Dake Junior High School Club planned to arrange school assemblies where plays dealing with famous scientists would be presented, or scientific principles would be demonstrated.

AN EXHIBIT on "Microscopic Life of the Sea" was prepared by the Research Council at Incarnate Word Academy, Corpus Christi, Texas, for presentation at a convention of the National Council of Catholic Men.

TRI-SCI Club at the Greenville, S. C., Senior High School, reports a marked improvement in its public relations program

through the use of qualified local citizens as guest speakers and field trip guides.

THE D. I. HAYDEN Math and Science Club at Hayden High School, Franklin, Va., conducted an analysis of the community's drinking water.

AS ITS FIRST project, Beta Chi Science Club at Charity High School, Rose Hill, N. C., chose to equip the school's science department with blackout curtains.

THE NATURAL History Club at the Ft. Worth, Texas, Children's Museum helps collect and prepare the museum's scientific exhibits.

LABELING the names of trees in a community park occupied members of the Bi-Phy-Chem Club at Central Junior High School, West Chester, Pa.

THE INFORMATION program of Prima Scientia Club, St. Paul, Minn., includes publication of a science newsletter every other week.

• Science News Letter, 79:394 June 24, 1961

ENTOMOLOGY

Heated Male Mosquitoes Change Into Females

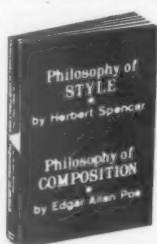
► **WHEN IMMATURE** male mosquitoes get too hot, they grow up to be females. Except for a slight difference in certain feelers, they are then indistinguishable from normal females, both in external appearance and internal structure.

Drs. William R. Horsfall and John F. Anderson of the University of Illinois, Urbana, report that when larvae of *Aedes stimulans*, a snow-pool mosquito common to Canada and the northern United States, are subjected to a temperature of 85 degrees Fahrenheit for seven days, all the larvae hatch out as apparent females. (If the larvae receive high temperature exposure during the six days, the intended males become intersexes, mosquitoes with both male and female characteristics.)

If high temperature is applied only during the last three days before hatching, the males are still males, but they are sterile because their reproductive organs do not align into proper position. At a temperature of 75 degrees Fahrenheit, both males and females are normal.

This indicates that the excess heat not only suppresses development of maleness, but also enhances the expression of female characters, the scientists report in *Science*, 133:1830, 1961.

• Science News Letter, 79:394 June 24, 1961



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Questions

IMMUNOLOGY—How many percent of a test group of children were successfully immunized against measles? p. 387.

METEOROLOGY—How many persons were killed by tornadoes in 1960? p. 386.

Photographs: Cover, Bell Aerosystems Company; p. 387, National Aeronautics and Space Administration; p. 389, Atlantic Research Corporation; p. 396, Aero Service. Corp.

Claim Unfair Treatment For Low-Income Students

► THE AMERICAN public school system discriminates against children from low-income families and helps build social and economic class barriers, a New York sociologist believes.

The findings of Mrs. Patricia Sexton, assistant professor of educational sociology at New York University, are based on her study of school policies in an unnamed Midwestern "Big City," described as one of the country's largest.

Mrs. Sexton opposes use of IQ tests to segregate class work by determining which students are "slow" and which "fast." IQ scores rise as incomes rise, but there is no proof that the tests are "valid measures of native intelligence." She said wording of questions is biased because it assumes reading and vocabulary skills low-income youngsters cannot acquire, with no books at home and no one to read to them.

Commenting on a picture identification test given at "Big City," Mrs. Sexton said, "It would be an extremely rare child from a low-income neighborhood who would know about and be able to recognize pictures of a castle, a steeple, a lighthouse, a dwarf, a violin, or most of the other objects."

She is also critical of special courses for "gifted" children and other courses aimed only at preparing low-income children for low-paying "blue-collar" jobs.

Mrs. Sexton's book is titled, "Education and Income: Inequalities in Our Public Schools." (See p. 380, SNL, June 17, 1961.)

• Science News Letter, 79:395 June 24, 1961

BIOCHEMISTRY

Soil Microbe Enzyme Removes Hair From Hides

► AN ENZYME that removes natural hair from hides and produces a better quality leather has been discovered by scientists at the Rutgers Institute of Microbiology in New Brunswick, N. J.

Dr. Walter J. Nickerson and Dr. Joseph J. Noval reported that keratinase, a complex enzyme, speeds up the digestion of proteins, in this case hair, wool and feathers.

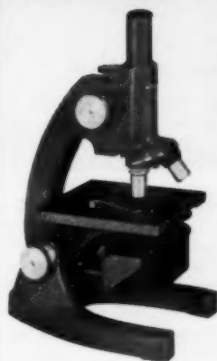
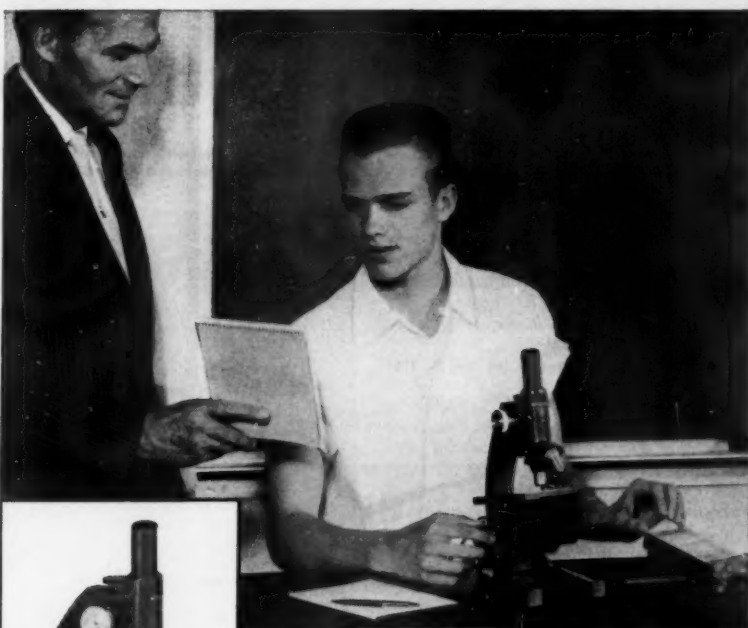
The enzyme is produced by *Streptomyces fradiae*, a microorganism found in soil. The process by which this organism digests wool is strikingly similar to the digestion of wool by the clothes moth.

The enzyme, recently extracted in pure crystalline form, does its job of dehairing by attacking the base of the hair shaft, a spot particularly sensitive to the dissolving-digesting action.

The new enzymatic approach to hair removal is superior to the traditional lime and sulfide method because it does not damage the hide and eliminates the problem of what to do with the chemical wastes produced by the older technique.

Keratinase is now being field tested by Merck & Co., Inc., and will be marketed under the trade name "M-ZYME" within a few months.

• Science News Letter, 79:395 June 24, 1961



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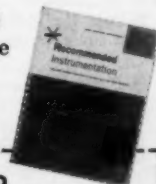
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✿ **MUSICAL SAVINGS BANK** has a clown that jiggles up and down to a tune when a coin is inserted. Gaily decorated in yellow, red and blue with a circus background, the bank is 6 inches high and 5½ inches wide. When full, money is removed by unlocking bank bottom.

• Science News Letter, 79:396 June 24, 1961

✿ **WIRELESS INTERCOM** for office or plant needs no wire installation. Just plug in the portable units where needed and talk. Intercoms have locking lever for dictation and a speaker that picks up normal conversation up to 20 feet. As many as eight additional units may be used without sacrificing voice quality.

• Science News Letter, 79:396 June 24, 1961

✿ **SWIMMING POOL ENCLOSURE**, a low-pressure nylon shelter, provides a year-round pool shelter. It can also be used, among other things, for boat storage, emergency hospitals or field offices. The anchored-down shelter is inflated by a constant stream of low pressure air from a blower, acting also as an air-conditioning system. Available in varying sizes and plastic coatings, the single walled building can be installed in four hours.

• Science News Letter, 79:396 June 24, 1961

✿ **AFRICAN MAP**, shown in the photograph, is a timely bold relief map of an important region of the world. Made of



plastic strong enough to step on, the 45-by-49-inch map, showing the 47 African nations, has nearly 1,500 geographical names. Mountains, plateaus and deserts are clearly shown. The map scale is one inch equals 126 miles.

• Science News Letter, 79:396 June 24, 1961

✿ **ANTISEPTIC SPRAY** in an aerosol can treats minor cuts and burns, and relieves the discomfort of poison ivy, sunburn and

insect bites. Sprayed onto the wound, it provides a transparent plastic bandage while relieving pain. Described as a first-aid kit in a can, the antiseptic is especially useful on boats, in automobiles, picnic kits, fishing and camping gear.

• Science News Letter, 79:396 June 24, 1961

✿ **HYDRAULIC JACK** for sagging floors or concrete slabs can lift more than four tons. Weighing only six pounds, the 9-inch-high jack with a 6½-inch lift also has wide use in garages and by truck owners.

• Science News Letter, 79:396 June 24, 1961

✿ **FREEZE-DRIED FOODS** let outdoorsmen include beef steaks, pork chops and other meats in their outdoor meals. Reduced to as much as one-third their original weight, the freeze-dried foods need no refrigeration and are quickly prepared by adding water and heating. These foods can be stored for many months and can be used in freezing to semi-tropical climates.

• Science News Letter, 79:396 June 24, 1961

✿ **FLASHLIGHT POINTER** pinpoints minute detail on motion picture or slide projector screens without the lecturer getting in the way, marking the film or having other inconveniences. The pointer, which projects a sharply visible arrow on the screen, is useful for teachers, coaches, photo exhibitors and salesmen.

• Science News Letter, 79:396 June 24, 1961



Nature Ramblings



➤ **THE WALL-EYED PIKE** is, in a way, a piscine orphan, for it is not a pike at all. It does have the long pike-like head and jaws with many pointed canine teeth. But it actually belongs to the perch family, and unlike the pikes has two dorsal fins, the front one having spines and the back one with soft rays.

Within the family, it is more closely related to the darters than to the true perches.

The fish is known by 20 different common names, and about 30 years ago the U. S. Bureau of Fisheries suggested that "pikeperch" be adopted as the more or less "official" common name. It caught on to a certain extent, but apparently "wall-eyed pike" was too firmly entrenched. In the latest checklist, the American Fisheries Society lists the fish as "walleye."

In spite of its half-pike/half-perch characteristics, the walleye is worthy of esteem. His firm, flaky white flesh makes excellent eating. A mature fish will measure three feet and weigh between 10 and 15 pounds.

Although found to a certain extent in

Wall-Eyed Pike



streams, the walleye is by choice a lake fish. It is found from Lake Champlain westward throughout the Great Lakes region and is particularly abundant in Lake Erie. From this northern range it swims fresh waters as far south as Georgia and Alabama.

Ordinarily the walleye spends its summer in six to 20 feet of water and usually feeds at night, mostly on smaller fish or crawfish.

The most successful baits for the walleye, experts say, are minnows, worms, crawfish and lamprey eels. Man-made lures apparently are inferior for catching walleye.

• Science News Letter, 79:396 June 24, 1961

Do You Know?

Dislike for the odor or taste of coffee may indicate a woman's pregnancy.

Space flights for years to come will be charted from timetables now being planned by scientists.

The action of natural hormone ACTH can be reproduced in man with a synthetic molecule representing about half the natural hormone.

Lightning kills 600 persons, injures 1,500 and causes more than \$125,000,000 worth of property fire loss and damage each year in the United States.

A new filtered white light system for aircraft cockpits will enable pilots flying at night to distinguish color on instruments and maps.

At least 10% to 15% of the heart attacks occurring in the United States do not produce any symptoms.

• Science News Letter, 79:396 June 24, 1961

Abbot, Bernard C.	182	Blood Pressure, High	132, 292, 312, 329, 377	Carver, David H.	50	Cooper, Joel	178
Ability, Intellectual	198	Blood seepage	377	Cat brain, Half	25	Copper poisoning	37
Abortion	233	Blood sugar	264	Caterpillar, Stinging	233	Corbett, Philip H.	77
Abortion, Legalized	233	Blood transfusions	9	Cattle	111	Corday, Elliot	24, 322
Acceleration	306	Blood vessels	9	Cattle grubs	359	Corticosteroid drugs	240
Accelerators	279, 376	Blow torch	192	Cavalieri, Liebe F.	131	Cortisone	344
Accident neurosis	228	Blue Scout	178	Cavanagh, Denis	258	Cosmetics	30
Accidents	20, 38, 338, 361	Bluebirds	31, 256	Celestone	312	Cosmic dust	278
Acetic acid	104	Blumel, J.	50	Cell storage	389	Cosmic rays	356
Acetylcholine	8	Book ends	40	Cella, Irradiated	131	Cotton sponge	85
Acquired aortic stenosis	73	Body build	164	Centaur rocket	17, 31	Couture, Jacques-Yves	279
Actinomycin D	41	Bogden, Arthur E.	214	Ceruloplasmin	147	Cow mattress	374
Adams, W. Mansfield	278	Bogen, Joseph E.	25	Cesarean, Postmortem	56	Cow, George A.	3
Adelson, Lester	265	Bomber	227	Cesium	70	Cowboy	57
Adenine	263	Bone-marrow injections	11	Chair seat	336	Cox, Hidden T.	359
Adkins, William M.	138, 166, 170	Bones	23	Chanoek, Robert M.	367	Crabapple, Wild	304
Adrenal cortex	232	Bonin, John H.	47	Chao, E. C. T.	3, 197, 278	Craig, Albert B.	201
Adrian, Lord	389	Booth, London W.	301	Charcoal snuffer	80	Cranes, Sandhill	163
Adult behavior	154	Borgstrom, Georg	307	Chatterjee, J. S.	377	Cramer, Alan	37
Aerobics, 150A	194	Boxing	217	Check-up, Annual	8	Creach, Oscar Jr.	377
Aerosol spray	64	Brafford, James O.	333	Chelating agents	212	Crescittelli, Frederick	153
Aerol	14, 148, 311	Brain, Split	25, 379	Chellean man	147	Criminals	371
African map	398	Brain chemistry	263	Chemical element mixture	258	Cropper, W. P.	309
Aging	34, 103, 164	Brain damage	25, 246, 258	Chemical plant	158	Crystal-growing kit	80
Agricultural research	5	Brain diseases	131, 159, 216	Chemical warfare	374	Cultivator, Eight-row	295
Air-breathing engine	306	Babies	25, 50, 248, 264, 376	Chemicals in drugs	212	Curtis, Cyril D.	279
Air pollution	277, 361	Baboons	37	Chemotherapy	146		
Air purifier	48	Bailey, William F.	221	Cherel, Guy	206		
Air safety	153						
Akrinol	248						
Alarm clock	288						
Alaska	101, 375						
Alcohol, Influence	245, 338						
Alcoholism	6, 21, 49, 302, 354, 390						
Aldebaran	343						
Aldrich, John W.	293						
Alexander, S. E.	211, 248						
Alford, H. E.	211, 213						
Algae	53						
Algebra	185						
Allergy	121						
Allylral	258						
Alsop, J.	56						
Aluminum	208						
Aluminum coating	176						
Aluminum foil pans	21						
American Medical Association	294, 376						
Amino acids	30						
Amoebiasis	36						
Amoebic infections	344						
Amphetamine	4, 22, 261						
Anderson, Edward	196						
Anderson, Clinton P.	295						
Anderson, Leland I.	323						
Anderson, Mary Frances	14, 132						
Anemic children	350						
Anesthesia	246, 296, 359						
Anesthetic theory	148						
Anesthetics	56						
Animal diseases	105, 201, 226, 296						
Animals, Germ-free	55, 97, 104, 259, 263						
Antarctica	248						
Antennas	176, 396						
Antibiotic	270						
Anticoagulants	72						
Antiseptic spray	86, 319, 390						
Ants	362, 373						
Anvene	230						
Anxiety	336						
Apollo capsule	360						
Arctic ice	203						
Arctic tern	341						
Ariel, Irving M.	9						
Arling, Charles D.	232						
Armistead, W. W.	350						
Armstrong, W. D.	100						
Arndt, Friedrich A. A.	50, 85, 86, 117						
Art and society	280						
Arthritis	98						
Arthropods	159						
Ashley, Franklin L.	57						
Asian flu	25						
Asian, Anna	155						
Asphalt, Reinforced	104, 201						
Assali, Nicholas S.	83, 261, 290, 291, 293, 305, 306, 307, 362, 373						
Astin, A. V.	290						
Asthma	24						
Astronaut	106						
Astronomical observations	211, 376						
Aswan dam	280, 362						
Atherosclerosis	72						

SCIENCE NEWS LETTER INDEX

SCIENCE SERVICE, WASHINGTON 6, D. C.

Vol. 79, Nos. 1-25; Jan.-June, 1961, pp. 1 through 396

Life out and insert in binder at beginning of volume

Aluminum	56	Baker, A. B.	216	Brain waves	390	Cherniak, Christopher	342	de Beer, Edwin J.	271
Aluminum coating	208	Baldwin, James F.	47	Brains	119, 149, 345, 370	Chickens	149	DeCarli, Paul S.	386
Aluminum foil pans	176	Baldwin, Ralph B.	114	Branca, Albert A.	264	Childe, Arthur E.	86	Decomycin	344
American Medical Association	21	Balloon astronomy	37	Branding iron	256	Children	14, 19, 215, 293, 370, 387, 390, 395	De Frenes, Joseph Florian	301
Amino acids	294, 376	Banks, W. C.	73	Brandt, John B.	366	Childs, Barton	264	Delis, Clement	296
Amoebiasis	30	Barbiturates	296, 344	Brasfield, Richard D.	294	Chile	69	Dempsy, J. R.	357
Amoebic infections	36	Barge	163	Bread, Enriched	153	Chimpanzees	10	Denner, Helmut	205
test	36	Barker, Elliott S.	6	Breyere, Edward J.	255	China, Red	3, 22, 377	Dental chemicals	101
Amphetamine	344	Barker, John L.	293	Bricklin, Barry	39	Chiu, C. C.	117	Dental disease	249
Anderson, Edward	4, 22, 261	Barnes, Broda O.	120	Brill, Robert H.	136, 185, 371, 387	Chloroform	246	Dental genetics	249
Anderson, Clinton P.	196	Barrow, Finis L.	120	Britain	89, 136, 185, 371, 387	Chlorosis	121	Dental repair	232
Anderson, Leland I.	295	Bascom, Willard	264	Brodbeck, Arthur J.	216	Chlorpromazine	30	Denton, Fred J.	265
Anderson, Mary	325	Bathyscaphe	279	Broemberg, Norbert	310	Cholesterol	106, 211, 377	Depression	35
Frances	328	Batterson, Sidney A.	350	Bronte-Stewart, B.	120	Choriocarcinoma	195	Dergenta	184
Anemic children	14, 132	Bauer, G. L.	9	Brown, Glenn A.	63	Chromosomes	50, 308	De Turville, C. M.	249
Anesthesia	350	Beagle, George W.	229	Brown, Sidney O.	366	Chronic illness	136	Deutsch, Armin J.	328
Anesthetic theory	246, 296, 350	Beardie, David C.	41	Brown, William J.	216	Chu, E. H. Y.	308	Deutsch, Karl W.	133
Anesthetics	148	Bears	276	Brusch, Richard G., Jr.	327	Cigarettes	199, 233	Diabetes	181, 191
Animal diseases	201, 266	Beatty, Guy M.	271	Buckman, Stanley J.	297	Cinematography	280	Diamonds	23, 386
Animals, Germ-free	105, 201, 266	Beatty, Robert H.	271	Buffington, Raymond F.	77	Cirrhosis	354	Die casting	56
Antarctica	55, 97, 104, 259, 263	Beck, William C.	333	Bundgaard, Robert C.	386	Cislin, Ira H.	338	Diet, Sea salts	72
Antennas	341	Bed pillow	352	Burdette, Walter J.	41	Civil defense	169, 386	Dimercaprol	72
Antibiotic	248	Bee hive	109	Burg, David	184	Clark, Le Gros F.	103	Dimethylformamide	309
Anticoagulants	176, 396	Bees	8, 181, 270, 306	Burnett, Frank W.	306	Classroom record book	224	Disarmament	22
Antiseptic spray	270	Bees, Max I.	329	Burton, Mutual Sr.	100	Clemmens, Raymond L.	258	Disaster victims	233
Ants	72	Belend, Albert	168	Busse, Ewald W.	35, 164	L.	258	Discipline, Classroom	19
Anvene	86, 319, 390	Bell, Joseph A.	329	Butler, John Allen	301	Clifford, Eugene E.	98	Divey, William	230
Anxiety	362, 373	Bellet, Samuel	271	Byers, Sanford	281	Clothes pole	270	Dobos, Joseph K.	296
Apoclo capsule	373	Beliuomini, Fred V.	360			Cobb, John C.	104	Dodd, Thomas J.	344
Arctic ice	336	Belyankin, F. P.	54	Cable spinning	289, 302	Coble, Herbert M.	40	Domino and lotto games	240
Arctic tern	336	Benliff, Hugo	200	Cahalan, Donald	338	Coccidiosis	255	Dorm, Harold F.	8
Ariel, Irving M.	203	Benjamin, J. Malvern Jr.	246	Calleau, Reida	336	Cockcroft, Sir John	38	Dosimeter	258
Arling, Charles D.	341	Jr.	200	Calcium stand	224	Coesite	197	Dough, John	286
Armistead, W. W.	9	Benson, Andrew A.	312	Calcium deposits,	6	Coffee decanter	336	Dragg bucket	245
Arms control, A. K.	313	Benton, John L.	6	Heart	73	Coffee-grinder	208	Drill, Thermal	183
Arms control, W. D.	232	Berghoff, Frank	357	Calvin	27	Coffee insomnia	294	Drilling ship	225, 248
Arnold, Friedrich A. A.	350	Berkner, Lloyd V.	235	Camera, Fastest	294	Cohn, Waldo	247	Drilling test	23, 162
Art and society	100	Beryllium	294	Camp, experiment	297	Cold, Common	104, 367	Drinking, Hidden	6
Arthritis	50, 85, 86, 117	Beta-hydroxyproline	312	Campbell, Angus	245	Cold-weather mask	96	Drinking straw	32
Arthropods	57	Betamethasone	102	Canada	302	Cole, Donald W.	333	Drivers	56, 312, 338
Ashley, Franklin L.	280	Bethe, Hans A.	320	Cancer	56, 85, 121, 131, 137, 146, 159, 169, 179, 181, 195, 207, 211, 214, 233, 238, 248, 255, 275, 277, 281, 283, 293, 299, 309, 340, 345, 360, 361	Colitis, Ulcerative	72	Driving simulator	181
Asian flu	98	Bicycle	168	Cancer, Lung	36, 199	College students	20	Drownings	201, 366
Asian, Anna	159	Bile duct, Clogged	99	Cancer, Skin	6, 248, 294, 377	College teaching	184	Drug, Livestock	359
Asphalt, Reinforced	57	Biological clock	374	Cancer drugs	27, 146, 248	Colleges, World affairs	149	Drugs	9, 25, 86, 159, 212, 230, 280, 319, 371, 390
Assali, Nicholas S.	25	Biological warfare	359	Cancer immunity	341	Color preference	158	Drummond, J. E.	279
Astin, A. V.	155	Biological Year	359	Cancer research	200, 370	Comb with razor blade	336	Drunk driving	33
Asthma	104, 201	Bird repellent	47	Cancer treatment	70, 211, 377	Comet Candy-Taylor	25	Dryden, Hugh	201
Astronaut	83, 261, 290, 291, 293, 305, 306, 307, 362, 373	Birds	31, 182, 230, 256, 343	Candy, M. P.	25	Comet Encke	102	Dubos, Rene J.	281, 376
Astronomical observations	290	Birth defects	89	Canoe, Birch	163	Commoner, Barry	46	Dull, H. Bruce	312
Aswan dam	24	Bisguy, Jay L.	215	Canvas, Aluminum	80	Communication satellites	339, 357, 360	Dummy space flight	179
Atherosclerosis	106, 211, 376	Black-Schaffer, Bernard	306	Car tray	116	Communications	216	Duncan, Charles	211
Atlas rocket	280, 362	Black widow spiders	73	Carbon, John A.	299	Community leadership	59	Duncan, Edward T.	221
Atlases	72	Bland, Marshall R.	318	Carbon dioxide	211, 377	Compatibility	245	Dust cloud, Earth	57
Atmospheric research	137, 376	Blankets, Throw-away	119	Card photo pack	245	Computers	53, 148, 158, 194, 234, 313, 315, 345, 370, 375	Dusting fabric	336
Atomic clock	150, 155	Bleeders	371	Carpenter, John A.	270	Comstock, George W.	101	Dworkin, Barry R.	142
Atomic energy	194	Bleeding	200			Concrete patch	32	Dying patient	344
Atomic Energy Commission	54, 151, 222, 296	Blind	98, 212, 253, 313			Contour farming	26	Dyna Scar	357
		Blood	54, 313			Contraceptives, Oral	38		
		Blood bank	24, 254			Control center,	261	Eagan, John T.	132
		Blood disease	39, 86, 222, 296			Mercury	261	Earth	150, 162, 377
		Blood pressure	22, 296			Control system, Space	191	Earth crown	300

Air drill	278	Flumidin	25	Graphite coating	240	Hormones	132, 230,	Jupiter spot	87
Earth electric currents	339	Fluorescent lamp	384	Grass seed, Air-sown	24		236, 286,	Juvenile delinquents	
Earth history	265	Fluoridation	232, 287	Grasshoppers	208	Hormones, Female	25		
Earthquake	183, 265	Flying buses	290	Gravity, Solar	360		72, 121, 233		
Eason, William M.	59	Fly-or-drive vehicle	256	Gray, Reed A.	239	Hornbill	49, 51		
Eating	40	Folding table	384	Green, Frederick H.	231	Horse lung study	153	Kallman, Hartmut P.	83
Echo problem, Radio	360	Food additives	340	Green, William H. M.	134	Horsfall, Frank L. Jr.	178	Kaphan, Marvin N.	361
Echo satellite	7, 217, 242	Food and Drug Administration	24	Greenspan, Irving	340	Horsfall, William R.	394	Kappas, Atallah	296
Eclipse, Solar	58, 89			Gregory, Kenneth F.	212	Horvath, Lorand		Kappus, Peter G.	290
Edthamil		Food For Peace	266	Grice, George D.	41	Meray	6	Kare, Morley R.	47
calciumdisodium	73	Food clinics	191	Grissold, R. Arnold	312	Rein, E. A.	198	Karstad, Lars	285
Edgerton, Harold		Food, Gilbert B.	59	Groover, Robert V.	376	Hoford, James		Kaufman, Laura Sue	139
	74, 379	Ford Foundation	59	Gross, Ludwik	85	M.	138, 326	Kelley, Fritz Gunther	318
Edison, Thomas Alva	372	Foreign doctors	344	Grundhog	80	Hospital bedding	233	Kelley, Rita M.	121
Education	135, 344, 358	Foster, John F.	235	Gruenther, Alfred M.	313	Hospital costs	354	Kelly, John J. Jr.	315
Egdahl, Richard H.	286	Fox, Arthur Lawrence	271	Gubner, Richard S.	292	Hospital faucet		Kelly, John S.	375
Egg beater	111	Fracton L	132	Guidance system	69	aerators	233	Kelter, Joseph J.	63
Eggs, Raw	168	Fracton ruler	384	Gun, Cancer detecting	281	Hospital mask	32	Kemney, John G.	215
Ego	40	France	149	Gunter, Gordon	99	House for aged	35	Kennedy, B. J.	280
Egypt	24, 89	Frank, Jerome D.	201	Gusberg, S. B.	309	House numbers	192	Kennedy, John	
Eisenhower, Dwight		Frank, Adolf	271	Guttmacher, C. R.	163	Houseboats	126	Keratinase	395
	34, 51, 297	Frederick, Ralph H.	137	Guttmacher, Manfred		Houston, Marietta	322		
Eleanor Roosevelt		Frederickson, Arnold C.	211	Gyron	371	Howe, Chester W.	233		
Institute	196	C.	221		229	Howell, Alun Raymond	77		
Electric clock	176	Freeman, Stephan T.	221			Hsu, S. Y. Li	254		
Electric currents	296	Freeze-dried foods	396			Huch, William F.	239		
Electric power	39, 275	Freezing	99			Huggins, Charles	275		
Electrocardiograph	329	Freitag, Robert F.	242			Humanitarianas	165		
Electro-spark method	133	Freure, B. T.	198			Humason, M. L.	396		
Element 103	33	Friedman, Herbert	303			Humbrecht, Hubert H.	182		
Elia, Frank B.	386	Fritz, Charles E.	233			Hunter, M. W.	345		
Emanuel, C. F.	311	Frits, Wilbert G.				Huntington, Morgan G.	64		
Emotionally disturbed children	215	Frog	192			Hunziker, Walter	318		
Empysema	153	Fry pan	160			Rudolf	318		
Enamel, Rehardening	72	Fuel cells	39, 213, 275			Huppert, Joseph	293		
Encephalitis virus	265	Fuel tank	65, 67			Hyades	296		
Engineers	390	Fuller, J. L.	319			Hydemann, Lee	104		
Engineers Joint Council	285	Fungicide	230			Hydrocephalus	88		
Enrico Fermi Award	54	Fungus infection	248, 265			Hydrogen	279, 306		
Environment, Cool	25	Funt, Tobias R.	286			Hydrolys	119		
Enzymes	87, 98, 152, 212, 286, 395	Fusion, Controlled	155			Hypertension	282, 312		
						Hyperventilation	201		
Epilepsy	99					Hypnosis	174, 201, 319, 327		
Equator	198	Gabrielson, Ira N.	182			Hysterectomy	367		
Eraser, Powered	290	Gagarin, Yuri	243			Hysteria	152		
Ekimino clothing	273	Galbraith, J. Kenneth	105						
Estrogen	233	Gal bladder, X-rayed	146						
Evans, John A.	345	Galstones	168						
Everett, Mark Allen	6	Gallup, George H.	88						
Ewing, John	265	Gamma globulin	56, 386						
Ewing, Maurice	217	Gangs, juvenile	4						
Exploding stars	280	Gard, Joseph E.	20						
Explorer satellites	261	Gardner, Wallace J.	383						
	290, 387	Gartlein, C. W.	25, 231						
Explosive shock	386	Gary, Norman E.	329						
Eye	390	Gas chromatograph	230						
Eye surgery electrode	68	Gatzert, Ernest H.	366						
		Gauge-key case	96						
		Gavin, Raymond	21						
		Gazes, Peter C.	344						
		Geiger counter kit	256						
		Generator	256						
		Thermoelectric	78						
		Genetics	9						
		Genius, Key to	19						
		Gerioptil	159						
		Germany	390						
		Germ-free animals	69						
		Ghlorso, Albert	259						
		Glaever, Ivar	103						
		Gleason, Ronald J.	214						
		Gifted children	19						
		Gilbert, Perry W.	338						
		Glinzo, Herbert	277						
		Gittinger, Edgar A.	276						
		Glaciers	302						
		Gland removal	169						
		Glass, Age of	39						
		Glass, Bentley	292						
		Glass	211						
		microballoons	209, 211						
		Gleasman, Vernon E.	31						
		Glenn, John H. Jr.	134						
		Glennan, T. Keith	55						
		Globe	288						
		Glutamic							
		dehydrogenase	286						
		Gnat traps	162						
		Goals	376						
		Gode, Alexander	206						
		Goebel, Kenneth W.	377						
		Gold, Eli	50						
		Gold, Thomas	262						
		Goldberg, Franklin H.	245						
		Goldberg, Marshall	21						
		Gould, Anna	137						
		Goldschmidt, Walter							
		R.	89						
		Goldstein, Avram	294						
		Golf club grip	176						
		Golfing umbrella	192						
		Gonorrhea	240						
		Good, Thomas A.	240						
		Goose, Flightless	5						
		Gordon, Kenneth H.	7						
		Jr.	310						
		Gordon, Robert J.	142						
		Gould, Laurence M.	226						
		Gowings, Dan D.	338						
		Grad, B.	181						
		Graham, Harold M.	386						
		Graham, Ernest W.	50						
		Grants	40, 51, 56, 168, 358						

	Liver, Isolated	178	Michael, Donald N.	152	Novalcain	117	Pike, Wall-eyed	306	Research	40, 121,
	Liver damage	98	Michelson, Irving	46	Noyes, W. Albert, Jr.	40	Pill box alarm	80		219, 281, 340, 372
322	Livestock disease	255	Migraine	203	Nuclear airplanes	239	Pilot error	153	Retirement	34
	Lobster, Boiling	99	Milk, Taste	198	Nuclear arms control	243	Pilot guidance	213	Reynolds, Donald C.	301
	LoCicero, Victor J.	249	Milk diet	344	Nuclear reactors	20,	Pilots' handbook	120	Reynolds, George W.	216
82	Lock, Household	48	Milky Way	21, 280, 290		38, 89, 191	Pitdown Man	119	Ribicoff, Abraham	137, 370
296	Lockhart, H. B.	152	Miller, A. L.	62, 73	Nuclear tests	149, 185,	Pipe layout	240	Rich, George D.	169
361	Locomotion	193, 207	Miller, Henry	228	Nucleic acids	355, 374	Instrument	152	Richards, Victoria	
490	Loeb, Ernest	77	Miller, Lyle	5	Nunn, J. F.	296	Placebo	322	Richardson, David A.	84
297	Longacre, Jacob J.	323	Mindes, Barry	217	Nutrition	164	Planetarium	126, 199	Richey, Harold	133
139	Lotz, John C.	255	Miner, Richard Y.	84	Nye, Anthony E. T.	191	Planets, Photograph	24	Riecken, Henry W.	40
265	Low, George M.	373	Mineral production	104	Nylon 7	198	Plankton, Arctic	41	Riley, Harris D. Jr.	59
318	Lowdermilk, Walter C.	26	Minerals, Red China	3, 4			Plant growth control	199	Ringworm	258
121	Lucas, E. H.	27	Minnow bucket trap	144	OGO	40	Plasma	279	Rinne, W. W.	355
1215	Luminous ceilings	208	Minuteman rocket	134	O-phenanthrene	286	Plastic gadgets	48, 80,	Rittin	390
375	Lung disease	361	Missile launcher	33, 43	OZMA	295	126, 160, 240, 384		Ritter, John W.	146
63	Lung fungus drug	341	Missile radio	279	Ocean floor	162, 226,	Plastic surgery	29, 323	Robertello, Richard C.	30
215	Lyman-alpha spectrum	303	Missile site	22		248, 264, 329	Pleiadis	375	Roberts,	
395	Lynoral	72	Missiles	134, 178,	Ocean survey	227	Plowshare	185, 374, 375	Claudius H. M.	389
			Mitchell, Jere H.	241, 242, 278	Oceanographic research		Plutonium	54	Roberts, Kenneth A.	207
	McCarthy, R. D.	198	Mitchell, Thompson H.	354	Oceans, Origin	104, 105, 278,	Polarization	82	Roberts, F. H.	296
	McComb, Andrew L.	24	Mohole	23, 162, 225,	Ochsner, Aiton	212	Pollak, H. O.	185	Rocket belt	385, 386
354	McCrumb, Fred R. Jr.	341	Molds, Disposable	24	Odors	152	Polio control	73, 86,	Rocket engine test	291
278	McDermott, Walsh	387	Molling, Peter A.	32	Ogg, Elizabeth	136	121, 207, 235, 254, 280,		Rocket fuel	285, 375
114	McDermott, William V.	341	Molten salt	67	Ogle, James D.	294	Pool sanitizer	111	Rocket motor	117
36	Jr.	178	Molybdenum	41	Oil wells	53, 71, 163	Porpoise	202	Rocket skirts	7
149	McGovern, George	266	Money guide	48	Oken, Donald	233	Poultry disease	255	Rocket test stand	387
304	McGovern, John P.	233	Monogloss	50, 201	Olansky, Sidney	24	Prange, Charles H.	100	Rocket thrust	360
14	McGrath, Earl J.	342	Monkeys		Olinsky, Man	23	Pregnancies	73, 377	Rockets	17, 133,
251	McLaughlin, Reba	50	Experimental	14, 90, 379	Oliver, Vincent J.	328	Premarin	92		178, 194, 217, 218, 219,
344	McLaughlin, Richard F. Jr.	153	Monogram kit	192	Operations	376	Presidential election	295	242, 243, 339, 362, 386,	387
366	McMurray, William C.	103	Moon	67, 201, 244,	Optium	328	Press, Frank	328	Roedi, Leo	248
344	McMurray, Robert S.	262	Moon instruments	115, 231	Optical illusion kit	368	Prestige polls	160	Roemer, Elizabeth	102
344	McNeer, Gordon	248	Moon landing	356, 362,	Ore deposits	41	Printmaker	160	Rogers, E.	1, 7
	McNell, Homer C.	276	Moon map	114	Orleans, Leo A.	315	Probability kit	336	Rogers, Joseph	233
297	MacDonald, Gordon	244	Moon photographs	22	Orr, Henry C.	389	Proceane	117, 159	Roller-road	41
357	J. F.	302	Mop, Swivel-head	176	Osage orange	342	Project Mercury	178,	Rolling pin	126
170	MacKay, James R.	302	Morgan, Russell V.	38	Outboard motor oil	320	Project Rebound	257, 261	Rolling reader	352
420	MacKenzie, Vernon G.	371	Morphine	21	Overholser, Winfred	238	Project Relay	217	Roos, Charles E.	291
392	MacLay, Walter S.	371	Morrison, Willard L.	253	Over-weight	181,	Projector, Portable	192	Rorschach test	245
320	MacLean, Paul	19	Morse, Roy E.	253	Oxygen supply unit	368	Proinetic	359	Rosen, Harold	201
137	Magnetic fields	103,	Morse, Warren W.	361	Oxygen system	235	Propeller	103	Rosenblith, Walter A.	370
147		179, 377	Morton, John H.	9			Proton structure	102	Rosenfeld, Morton M.	63
410	Magnetic gadgets	16, 208	Moser, Marvin	296	P-14	179	Przybylski, Antoni	183	Rosenhaupt, Hans	184
47	Magnetic research	268	Mosquitoes	296, 394	POGO	40	Psychoanalysis	105	Rosenstiel, Annette	19
5	Magnetic wire	291	Moth, Migratory	149	Page, Irvine H.	68, 106, 132	Psychopaths	310	Rosenthal, Fred	246
246	Magofin, Robert L.	86	Moth, M.	88	Pain	98, 132, 148	Psychosis	310	Rosenthal, Murray W.	271
198	Magoney, Eugene T.	205	Mouth cage	80	Pain killers	11, 312	Psychotic character	310	Rothman, William D.	138
198	Mail order clerks	245	Movie camera	320	Pain, Rust preventive	111	Public address unit	398	Rotor structure	1, 7
363	Mallard, James	162	Moyer, Dean	205	Pande, P. G.	168	Public school system	205	Rottino, Antonio	200
297	Mallory, V. Standish	197	Mueller, Richard A.	205	Paper bag holder	160	Pueblo Indian site	323	Rouslin, Shella	360
198	Mamelok, Louis	121	Mulder, Donald	73	Paper mache mix	144	Pump, Portable	320	Royal jelly	181
201	Mammals	64	Munnich, K. O. II	88	Paralysis	86	Puppies, Training	232	Rudman, Daniel	132
201	Mammoth	197	Munyan, Donald A.	6	Parasites	25	Purcell, Arthur L.	312	Rusk, Dean	57
153	Man, Ancient	23, 147, 229	Murder, Adolescent	59, 390	Paresis	40	Purvis, James T.	153	Russell, William L.	249
147	Man, Prehistoric	162,	Murder, Oldest	147	Park, Thomas	3			Russia	40, 150,
47	Man in space	3, 243,	Murray meteorite	152	Park relief map	160	Quack, Mail order	147	184, 343, 371, 386	
397	Manak, Rita C.	357	Muscle disease	152	Parsons, William B.	160	Queen honeybee	329	Russian moth data	136
119	Mann, W. B.	161	Muscle drugs	230	Patents	77, 84, 99, 118, 134,	Quigley, George D.	149	Russian path	230
63	Manual workers, Aged	103	Muscles	219	Passaro, Edward P.	24	Rabinow, Jacob	118	Russian space	231, 363
29	Map-makers, Volunteer	72	Muscular dystrophy	27	Patent and repair kit	144	Rabinowitch, Eugene	131	Russians, Obese	294
63	Marble sealer	336	Mushroom drug	288	Patents	6, 31, 47, 63,	Rabinowitch, Eugene	131	Ryansson, Edward H.	258
78	Marcel Holzer	53	Mushrooms	199	77, 84, 99, 118, 134,	153, 191, 205, 221, 239,	Rabinowitch, Eugene	131	SAMOS	91, 102, 114
32	Foundation	53	Mutations	41, 292	158, 171, 276, 301, 318,	333, 350, 365, 383,	Rabinowitch, Eugene	131	S-45 satellite	151
32	Markowitz, Wm. O.	150	Myrick, George	6	Patients	168	Rabinowitch, Eugene	131	Sabin, Albert B.	280
25	Marmarston, Jessie	72			Paul, John	87	Rabinowitch, Eugene	131	Sadove, Max S.	216
25	Marple	322, 383	Nagib, Mohamed	89	Paul, John R.	121	Radiation	25, 38, 46,	Safety gadgets	336,
22	Marrings	158	Nailset	32	Paul, John R.	121	62, 103, 164, 246, 258,		Sagan, Carl	352, 368
22	Martin, Howard H.	158	Nardil	86	Paulin, William P.	389	276, 286		Saint, David	213
34	Maternal deaths	158	Nassau, Jason J.	280	Pauling, Linus	350,	Radiation belts	103,	Saint, David	276
39	Mathematics	185	National Academy of	285	Payson, Henry E.	168	150, 264, 278		Sailsbury, Winfield W.	221
26	Mathews, James A.	350	National Academy of	226, 248	Peace Corps	183, 323	Radiation effects	249, 368	Salisbury, Winfield W.	221
24	Mathews, Thomas A.	67	Engineering	226, 248	Pearce, Lewis C.	253	Radiation monitor	32	Salmon staircase	271
72	Maurer, Fred D.	148	National Academy of	226, 248	Pearson, Carl M.	152, 219	Radiation protection	11	Salt, Effects of	248, 377
83	Maxwell, Milton A.	6	Sciences	226, 248	Pell, Sidney	120	Radiation surgery	137	Salt water	
12	Maxwell, Morton	222	National defense	22, 374	Pencil, Thin-lead	111	Radiation therapy	131, 371	conversion 62, 73, 230,	355
29	Mayer, Ann	139	National Science	248,	Pencilin	277	Radio	7, 155, 160, 371	Samuels, Arthur J.	371
201	Mayers, Henry	249	Foundation	40, 51,	Penick, Sydnor Barksdale	329	Radio map	21	San Andreas fault	136
83	Mayflower genealogy	83	50, 68, 121, 219, 248,	358, 372, 373	Perera, Wilfred S. E.	185	Radio signals	201, 295	Sanders, Arvey C.	277
9	Measles vaccine	14, 387	Natural resources	182, 298	Perhenazine	322	Radio star	367	Sandler, Henry O.	214
30	Medical care financing	85, 121, 137, 283	Navigation	247	Persky, Harold	319	Radio telescope	37	Sankovich, Melvin F.	318
30	Medical research	281,	354, 370	Natural resources	182, 298	Peters, Roger Paul	Radioactive iodine	24, 296	Sapphire covering	339
40	Megakaryoplesin	247	Nerve fibers	19, 182	Peterson, Dale	134	Radioactive potassium	256	Sargent, William	86
40	Meler, John M.	63	Nervous system	182	Peterson, David	318	Satellites, Artificial	7,	Satellites, Artificial	7,
95	Melancholia	86	Nobel Prize winners	389	Petrakis, Nicholas L.	253	25, 40, 55, 91, 102, 105,		114, 137, 217, 218,	
95	Melander, Bengt	248, 372	Nobel Prize winners	389	Petrakis, Roger Tory	336	114, 137, 217, 218,		219, 242, 259, 261, 281,	
12	Melanoma	248, 372	Northern lights	25, 73,	Petrakis, Roger Tory	336	339, 357, 387		339, 357, 387	
23	Melnick, Joseph L.	233	Nova rocket	231, 278	Petrakis, Roger Tory	336	Saturn rocket	217, 242	362, 387	
15	Meningitis	376	Nova rocket	231, 278	Petrakis, Roger Tory	336	Saucepan, No-stick	384	362, 387	
23	Menominit Indians	69	Novoblocin	264	Petrakis, Roger Tory	336	Savings bank	396	362, 387	
26	Menstrual pain	117	Novoblocin	264	Petrakis, Roger Tory	336	Schandel, Royal C.	179	362, 387	
48	Mental deficiency	14	Novoblocin	264	Petrakis, Roger Tory	336	Schistosomiasis	24, 258	362, 387	
64	Mental hospitals	228,	Novoblocin	264	Petrakis, Roger Tory	336	Schizophrrenia	87, 228	362, 387	
14	Mental illness	9, 238,	Novoblocin	264	Petrakis, Roger Tory	336	Schlesinger, Herbert J.	310	362, 387	
67	Mercury	310, 322, 360, 371	Novoblocin	264	Petrakis, Roger Tory	336	Scholes, Robert T.	323	362, 387	
44	135, 179, 290, 291, 362,	373	Novoblocin	264	Petrakis, Roger Tory	336	Schools	135, 351, 395	362, 387	
11	Mercury-Redstone	55	Novoblocin	264	Petrakis, Roger Tory	336	Schrove, D. Justin	73	362, 387	
99	Merendino, John	39	Novoblocin	264	Petrakis, Roger Tory	336	Schram, Alfred C.	370	362, 387	
11	Merrill, Patterson D.	333	Novoblocin	264	Petrakis, Roger Tory	336	Schrek, Robert	131	362, 387	
48	Mesocaph	104	Novoblocin	264	Petrakis, Roger Tory	336	Schulman, J. H.	258	362, 387	
68	Metabolism	286	Novoblocin	264	Petrakis, Roger Tory	336	Schulz, Leonard P.	232	362, 387	
68	Metal shaping	137	Novoblocin	264	Petrakis, Roger Tory	336	Schur, Sam H.	50	362, 387	
48	Meteor craters	193	Novoblocin	264	Petrakis, Roger Tory	336	Schutz, Dan F.	56	362, 387	
48	Meteorites	4, 227, 314,	Novoblocin	264	Petrakis, Roger Tory	336	Schwarm, Edward G.	31	362, 387	
99	Meteors	83, 297	Novoblocin	264	Petrakis, Roger Tory	336	Schwarzchild, Martin	24	362, 387	
99	Methotrexate	195, 248	Novoblocin	264	Petrakis, Roger Tory	336	Science	46, 51, 53, 61	362, 387	

Science aptitude tests	74, 379	Space medicine	178	Thompson, John F.	11	Underdeveloped countries	26, 40	Weiss, David W.	341
Science budget	51	Space observatory	290	Thomson, Sir George	53, 61	Universe	262	Weiss, Herbert K.	313
Science Clubs	239, 299, 367, 394	Space probes	115, 151, 179, 231, 339	Threlton, C. W.	62	Utah, John B.	341	Weich, Edward Sohler Jr.	318
Science fairs	214, 325	Space radar	179	Threshold, Steel	16	Uvicon	37	Weider's helmet	64
Science information	3, 162	Space recovery	179, 291	Thring, M. W.	280			West, Robert	302
Science journals	6, 22	Space research	218, 259, 291, 362	Throat, Lump	152			Westerns, TV	14
Science Talent Search	70, 71, 104, 135, 138, 145, 155, 161, 165, 166, 170, 200, 318, 379	Space travel	3, 103, 114, 201, 211, 235, 246, 293, 328, 362	Thromboplasin	247	Vaccine, Measles	14, 387	Westinghouse Awards	166
Scientists	46, 50, 102, 170, 229, 308, 399	Space vehicles	357, 373	Thyroid hormone	21, 258	Vaccine, Polio	73, 86, 89, 121, 297, 233	Wexler, Harry	115, 357
Scientists, Young	282	Speaker system	336	Thyroid test, Faulty	146			Wheeler, John A.	262
Scott, Kenneth G.	345	Sperandio, Glen J.	330	Tic douloureux	168			Wheeler, John C.	142
Screw driver	256	Sperry, R. W.	379	Tick bite paralysis	132	Vacuum cleaner tool	256	Whipple, Fred L.	57, 244
Sea water	275	Spheres, Metallic	278	Ticks, African	14	Van Allen, James A.	150	White, Philip L.	312
Seaborg, Glenn T.	54, 170, 339	Spherulites	215	Tietze, Christopher	233	Van Allen belts	103, 150, 264, 278	White, Robert W.	117
Seadragon	170, 339	Spider	230	Time standard	150			Wieme, R. J.	98
Sebrell, W. H. Jr.	153	Spiegler, Kurt	368	Tires	198	van der Schalle, Henry	24	Wiener, Norbert	234
Seibold, R. E.	258	Spondylarthritis	86	Tissue changes, Space	293	Vanguard satellite	387	Wiesner, Jerome B.	22, 34, 196
Seeing	153	Sponge cloth	16	Tissue rejection	34	Van Someren, V. G. L.	14	Wildlife	163
Seismic research	355	Sprinkler system	384	Toilet latch	32	Vehicle design	152	Williams, Quinton E.	349
Seymonov, N. N.	30	Sputnik V	105	Tokaty, Grigori	363	Veins	322	Williams, V. C.	165
Septic tank gauge	208	Squirrel	153	Tolstoy, Aleksandrovich	288	Velban	181	Willis, Benjamin C.	358
Sequoia tree	211	Stabler, Robert	83	Tooth decay	72, 101, 214, 293	Venereal disease	40, 116, 136, 277	Willoughby, D. A.	164
Serotonin	149, 286	Stair, Carlyle B.	47	Tooth enamel	293	Venetian blind coating	48	Wilson, Charles L.	293
Sesoms, Stuart M.	195	Stalnaker, John M.	198	Toothbrush	96	Venus 113, 115, 201, 213, 231	48	Wilson, Miriam G.	233
Sewing thread	304	Staphylococcal infections	233	Top, Franklin H.	148	Venus probe	115, 177, 187, 360	Wilson, Robert R.	102
Sex	19, 104, 216, 322, 394	Stearlings	343	Top, Top III	279	Vernon, Jack A.	98	Wilson's disease	57, 212
Sexton, Patricia	395	Stars	37, 58, 122, 183, 196, 250, 264, 289, 291, 328, 329, 330, 335, 392	Topolish, John G.	231	Viral diseases	344	Wind flow	137
Shahidi, Nasrollah T.	328	Starting platforms	394	Tornadoes	162, 185, 216	Virugon	25	Window gadgets	111, 286
Shampoo holder	96	State agencies	390	Torance, E. Paul	282	Virus	367	Winter driving	56
Shamrock	176	State Department	297	Tourniquets	312	Visor, Anti-glare	270	Winters	82
Shanidar cave	211	Steinberg, Bernard	247	Toxoplasma	168	Vitamin C	253	Wire coatings	198
Shapiro, Robert	146	Stearns headsets	16	Toy robot	176	Vogt, Richard	152	Wire stranding	307
Sharks	232, 338	Sterility	366	Toy top III	279	Volcano	88	Wise, Keith A. J.	57, 302
Shaver, Powered	270	Sternlieb, Irmin	57	Trachoma	104	von Braun, Wernher	242	Wissler, Robert W.	146
Shepard, Alan B.	305, 307, 362, 373	Stetson, C. Joseph	312	Tracking station	263	von Bulow, K.	262	Withers, Orval R.	185
Shock, Nathan W.	164	Stevens, M. G.	42	Tractor, Gas	55	von Karman, Theodore	306	Wittkin, L. B.	312
Shoe gadgets	80, 96, 240	Stewart, H. B. Jr.	229	Tranquilizers	30, 87, 105	Vredovoe, Lawrence E.	19	Wittmann, Walter I.	230
Shriver, Sargent	183	Stewart, William D.	389	Transformers	304			Wohlschlag, Donald E.	232
Sibley, Charles G.	230	Stomach	14, 200, 361, 371	Transistor radio	96	Waisman, Harry A.	14	Wolfe, Alvin W.	311
Siegel, Keeve M.	201	Stone Age tools	229	Transmitter	114	Waksman, Byron H.	309	Wood, William D.	277
Siekert, Robert G.	248	Stonehenge stones	360	Transportation	41	Waksman, Selman A.	84	Wood, E. M.	340
Silver, Albert W.	215	Stratoscope II	368	Travel-clock radio	256, 368	Walkie-talkie	144	Wood, Lawrence A.	153
Silverstein, Abe	165, 179	Stress tests	106	Traveler aids	192	Wall gadgets	48, 352	Wood oil finish	340
Simon, Herbert A.	194	Stretchers	341	Tree tumors	311	Wall paint	304	Wood pattern	369, 375
Simpson, John A.	281	Strontium-90	46, 87	Trees, Washington's	126	Wallman, Joshua	138, 166, 170	Woods, Sherwyn M.	390
Singeing device	126	Students	20, 351, 374	Tritium	279	Walworth, Robert S.	389	Woodson, Billy J.	301
Singer, B. F.	3, 262, 360	Submarine detection	374	Trollor	192	Wangensteen, Owen H.	361	Woolslayer, Homer J.	205
Sinks, Jozsef	360	Submarine escape	337, 344	Trombald, John S.	111	Wardle, James M.	271	Work gloves	190, 201
Sirons, Janis Alfreds	271	Submarine paint	239	Trouser hanger	85	Wart cures	146	Work peace	270
Slater, Frederick D.	227, 275, 314	Sugar, Deadly	150	Truclove, S. C.	72	Warwick, Everett J.	168	Wostmann, Bernard S. J.	56
Skin diphtheria	296	Sugalski, Ryuichi	310, 361	Tsuno, Hardy Iwao	221	Washington, George	126	Wright, D. J.	70
Skin grafts	178	Sulfosugar	246	Tuberculin test	370	Water pollution	182, 298, 338	Wynder, Ernest L.	199
Skinner, B. Frederic	378	Suller, William J.	118	Tuberculosis	101, 341	Water ski intercom	208	Wynn, James F.	333
Slichter, Louis B.	183	Sun	7, 73, 249, 261	Tuft-dyed rugs	234	Water supply	82, 88, 150, 169		
Slide projector	224	Sun tan	179, 184, 249, 261	Tulip tree	384	Water therapy	168	X-rays	146, 197, 283, 292, 345
Slide rule kit	224	Sunglasses	256, 286	Tumbler balancing game	16	Waterman, Alan T.	358, 372	Yablonsky, Lewis	4
Slush, Ice-Age	197	Sunspots	73	Tumors	131, 159, 201	Weather	42, 75, 114, 362, 386	Yagoda, Herman	279
Smallpox	98	Superconductors	103, 291	Turkey, Pre-Sumerian	162	Weather forecasting	88, 105, 306	Yellowstone	41
Smiley, Charles H.	98	Supernovae	83, 361, 390	Twin calves	168	Weather satellites	88, 137, 357, 386	Yielding, C. Lemone	286
Smith, C. N.	296	Surgeons' exchange	120	Twinkling stars	329	Webb, James E.	217, 356	Yucker, Joyce Lea	327
Smithwick, R. H.	312	Surgery	360, 371	Typewriter gadgets	304, 352	Weber, John M.	134	Zacks, S. I.	265
Smok	201, 277	Survival suit	277	Typing shelf stabilizer	240	Weber, John M.	301	Zadunasky, Pedro	242
Smoking	120, 169, 199, 233, 299, 311	Sutherland, James M.	264			Wedral, Edwin J.	96	Zenith telescope	150
Snack tray	126	Swan, Henry	159	U-2 reconnaissance	386	Weight control	40, 312, 329	Zimmerman, Erwin H.	248
Snails	320	Sweetener, Sugarless	264	Ulcers	50, 312	Weightless testing	273, 285	Zinsser, Hans H.	14
Snake, Two-headed	85	Swim suit color	232	Ultraviolet light device	37	Weihl, Carl	312	Zug, Charles K.	207
Snow, Charles E.	311	Swimming pool alarm	240			Weiss, Jessica McC.	259	Zwicky, Fritz	205
Snow plow	80	Swimming pool shelter	396					Zworykin, V. K.	200
Snowbirds	16	Symonds, Percival M.	154						
Snowstorm	200	Synchrocyclotron	376						
Soap dish, Porous	16	Syphills	40, 216						
Social adjustment	117	Szent-Gyorgyi, Albert	389						
Social sciences	40	TEM	182, 343						
Soft rock layer	328	TGA	313						
Sognnaes, Reidar F.	308	TIC	200						
Soliless gardening	277	TIROS satellites	105, 357, 363						
Solar cells	54, 275	Tandon, J. N.	219, 357, 363						
Solar energy	7, 184, 261	Tape, Double-faced	320						
Solar flares	261	Tarara, Edward L.	191						
Solar magnetic field	261	Teachers	342, 379						
Solar satellite	339	Teaching device	64						
Solar wind	179, 249	Teaching machines	313, 378						
Solder pen	176	Teeth, Brushing	345						
Soldering gun	64	Teitel, Bernard	322						
Solecki, Ralph S.	229	Tektite	314						
Solid-fuel rockets	133, 178, 242, 243	Temperature scale	169						
Solvent	288	Tennis table	352						
Sonar system	202, 374	Tennyson, Virginia M.	88						
Sonoray	101	Tension	390						
Sound film, 8 mm	315	Teodorovic, Svetozar D.	30						
Soybean disease	121	Teschau, Paul E.	166						
Space	8, 55, 133, 134, 136, 151, 165, 178, 285, 297, 364	Tessman, Arno A.	16						
Space animals	10, 81, 83	Tester and spotlight	16						
Space communication	217	Testosterone	328						
Space flight	10, 290, 291, 306, 307, 373	Thermoelectric device	99						
Space guidance	94, 353, 357	Thermometer	182						
Space helmet	352	Thermoplastic	39, 155						
Space life	152, 227, 261, 314	Thinking	358						
		Thompson, C. Ray	311						

ERRATA, Vol. 79, Nos. 1-25, January-June, 1961

PAGE	TITLE BEGINS	CORRECTIONS
40	New Peroxide	Line 6, Ploumis for Loumis.
78	Books of	Eighth review, Psychical for Physical.
160	Nature Ramblings	Line 8, after ichneumon insert, actually a wasp.
202	Porpoise	Par. 3, line 7, a monkey for the chimp.
207	Vaccine Step-Up	Col. 2, line 12, millions of for 50,000.
211	Algae for Space	Line 5, after dioxide insert and water
258	Radiation Exposure	Line 6, after one insert milliroentgen
263	Origin of Life	Line 5, Houston for Texas.

